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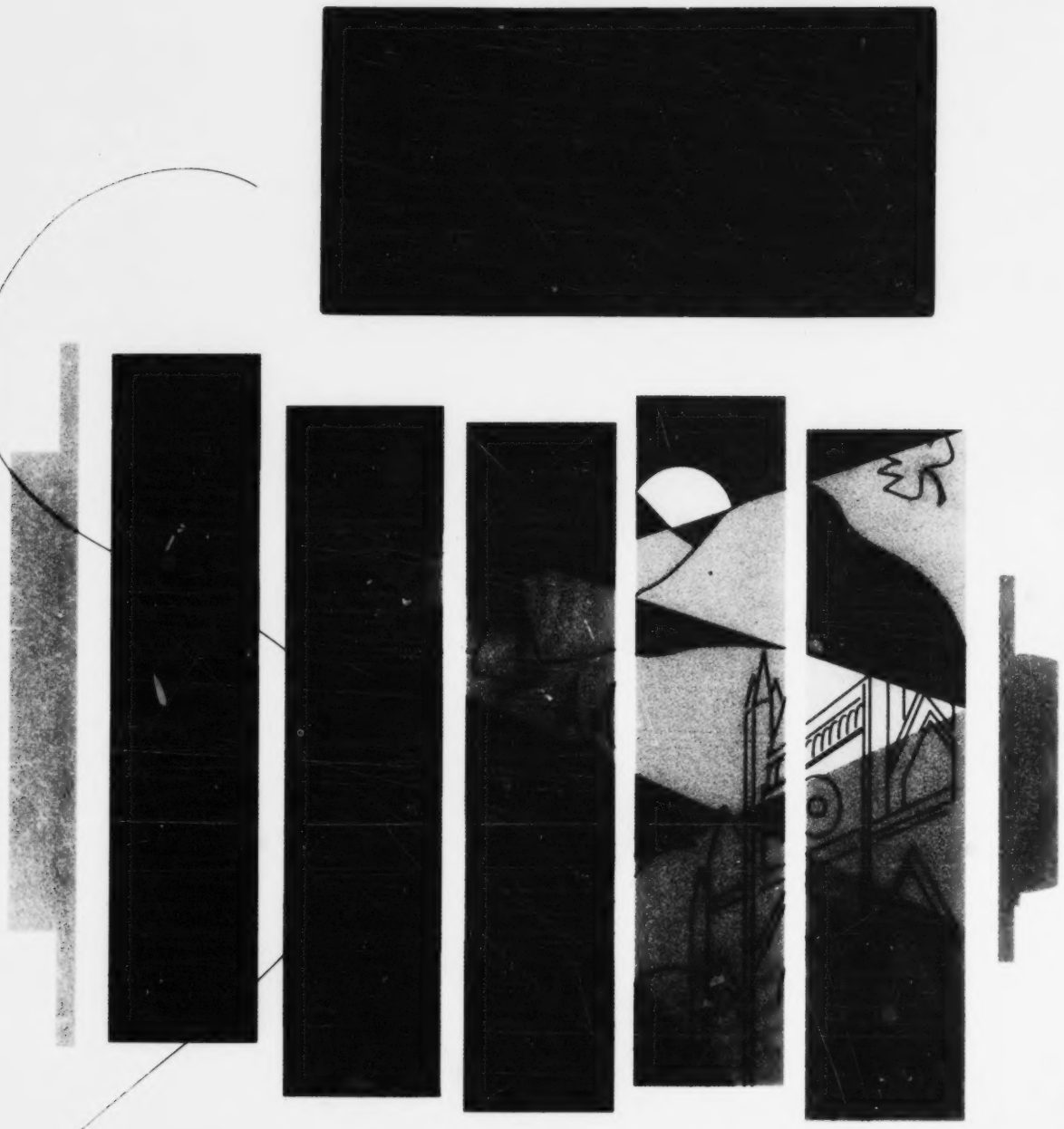

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Research Report

Case Needs Review: Substance Abuse Domain

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Case Needs Review: Substance Abuse Domain

by

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EXECUTIVE SUMMARY

About two thirds of offenders evidence some degree of substance abuse problems. This high prevalence, along with other sources of data, indicate a strong association between substance abuse and various types of crime. At this point, the particular nature of this association is not clear. However, there is support for the assertion that effective treatment of substance abuse reduces crime.

Since incarcerated substance abusers constitute a heterogeneous group that vary on many dimensions, assessment is needed to identify their particular needs, to match them to appropriate treatments, and to manage risks when they are released. In addition, there is a need to create a database for research and other purposes.

Assessment instruments for substance abuse can be roughly grouped into screening instruments, where the major function is to determine the presence or absence of a problem; more in-depth instruments that elaborate on the problem (e.g. allowing an estimate of the severity of the problem); specific instruments that are useful for establishing targets for treatment and relapse prevention, as well as assessing pre-post changes; and comprehensive batteries that assess not only patterns and severity of substance abuse, but functioning in many other domains. These broad assessment instruments can serve many purposes including the determination of multiple needs, determining appropriate treatments, and building a data base for research and other purposes. The CLAI would fit into this category.

Our review established that there are a number of brief and reasonable accurate screening instruments available, including the AUDIT, CAGE, ACI and MAST. However, the function of screening instruments is to identify those who should have a more thorough assessment. Since all admissions to federal prisons are assessed by the CLAI, the use of a screening instrument would be redundant.

Our review also identified several very good measures for assessing the severity of substance abuse problems, including the LDH, SADD, SADQ, ADS and DAST. Our analysis showed that the ADS and DAST, currently used by CSC as part of the CLAI, are as good or

better in terms of reliability and validity and other factors, as any comparable instruments available. Thus, we do not recommend any changes.

Our review of comprehensive assessment batteries also determined some excellent candidates, including the ASI, the AUI, CDAP, and the CLAI. At least one of these batteries, the ASI, is very widely used and is in its fifth edition. All batteries have generally good psychometric properties. In terms of number of items, the CLAI is possibly the most comprehensive and we could find no compelling reason to suggest the use of any other comprehensive battery in its place.

In effect, the CLAI serves multiple functions of screening, in depth assessment of substance abuse (including assessment by ADS and DAST), as well as assessment of many other domains (e.g. health, social, etc.). It can be used for treatment planning, and it has already resulted in a tremendous database of information on federal offenders. In addition, the computerized format is state-of-the-art and well accepted by the offenders. The immediate provision of feedback to offenders and extensive feedback to case management officers also is a distinct asset.

One of the few gaps in coverage by the CLAI is the lack of a screen for neurological deficits. CSC might consider the use of some recent computerized neuropsychological instruments that would fit the format of the CLAI, such as the Wisconsin Card Sort. Substance abusers, especially those with severe alcohol problems, commonly have neurological deficits that can interfere with treatment response. Identifying these deficits may be important in determining the best type of treatment to meet their needs. Such screening, together with other instruments routinely used by CSC may also serve to identify offenders with Fetal Alcohol Syndrome (Boland, 1998; CSC Research Report). Such individuals are likely to require special programming.

Our review of instruments assessing specific treatment targets suggests a number that might be incorporated into CSC substance abuse programs. Some of these, such as the IDS and IDTS, which assess situations where alcohol or drug use are most likely to be problematic, and the SCQ and DTCQ, which assess self-efficacy related to those situations, are already incorporated into CSC programs such as the CHOICES and OSAPP. However, other interesting

scales with good psychometrics are available. For example, the NAEQ measures offenders' expectations of negative consequences if she or he were to "go for a drink now". Such scales that isolate drinking expectancies (e.g. DEQ) are also useful for determining targets in cognitive-behavioural programs as well as allowing assessment of pre-post changes in those areas. The DEQ also has a useful companion scale (DRSEQ) that measures self-efficacy in various expectancy situations. Similarly, the AASE, which has excellent psychometric properties, also has considerable promise as a brief (20 item) assessment of self-efficacy at maintaining abstinence in high-risk situations. Accommodation to drug abuse situations should be relatively easy. Finally, the TRI should prove valuable in programs that target urges and craving for drugs or alcohol.

Many substance abuse treatment programs are now incorporating some versions of Prochaska and Di Clemente's Stages of Change model in order to better address treatment readiness and motivational issues. The SOCRATES and RTCQ appear to be good bets in this regard and might be incorporated into pre-treatment assessment as well as pre-post evaluations.

Our analysis of the substance abuse domains of "Case Needs Identification and Analysis" instrument, admissions version, noted that there was considerable subjectivity in assessing the primary indicator "Abuses alcohol (drugs)?", as well as with the other indicators in this section.

Our recommendation suggests that CSC adopt one of the following alternatives: 1) Operationalize what a positive response to this indicator would constitute; 2) Place the "Abuses alcohol (drugs)?" at the end of the other indicators and use these as an operational definition; 3) Substitute, or supplement with, the ADS and DAST and other information from the CLAI to determine if the offender "Abuses alcohol (drugs)?"

The reviewer would also like to raise the question of apparent overlap with the CLAI, in the substance abuse area and several other domains. Since both the "Case Needs Identification and Analysis" instrument and CLAI are completed on admission, it is not clear to this reviewer why the substantial information that is made available to the case manager from the CLAI cannot substitute for some of the domains of the "Case Needs Identification and Analysis" instrument that overlap (e.g. substance abuse). For example, it appears to this reviewer that the CLAI information is more thorough and valuable in determining substance abuse needs and treatment

options than the more limited and subjective "Case Needs Identification and Analysis" instrument. Based on materials provided, the reviewer could find no evidence for psychometric evaluation of the admissions version. While this is likely to be in progress, it is recommended that substance abuse identification on this instrument be compared with results from the same offenders on the CLAI.

The community version of this instrument has a clear function and the need for a brief, simple instrument makes practical sense. As well, substance abuse is determined in terms of interference with functioning in important life areas, although what constitutes interference is not defined. The review noted some inconsistencies, in that interference with social functioning other than marital/family is not included, nor is interference with mental and emotional health. This can be easily remedied, if desired. The reviewer notes that the single indicator question used has a built in redundancy that makes it likely to reflect the more numerous indicators used in the admissions version. If this measure is used as a general monitor of progress after release, the reviewer recommends a change in wording to reflect the period being monitored.

Motiuk and Brown (1993) present encouraging data on identification of substance abuse with the community version. A further validity study comparing identification rates with the ADS and DAST is recommended. In addition, since the criteria on which case managers base their judgements are not specified, a study exploring inter-rater reliability would also be appropriate. This seems particularly relevant if one of the aims of this scale is to have case managers systematically classify offender needs. Finally, a study on the same offenders comparing judgements made at admissions with those made at release would be useful.

These are the main conclusions from our review. The reader should note that other minor conclusions and suggested improvements are mentioned in the body of the text.

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CASE NEEDS REVIEW: SUBSTANCE ABUSE DOMAIN

This report is divided into three sections. Part I briefly considers the prevalence of substance abuse in adult offender populations and notes the relationship between substance abuse and crime. Part II reviews assessment instruments for substance abuse in offender and non-offender populations and critically examines the substance abuse domain of the 'Case Needs Identification and Analysis' instrument. Part III concerns conclusions and recommendations.

On the following page, we have provided a key to the substance abuse assessment instrument acronyms used throughout. We suggest the reader detach this key for easy reference while reading the report.

KEY TO ASSESSMENT INSTRUMENT ACRONYMS

Acronym	Instrument
AASE	Alcohol Abstinence Self-Efficacy Scale
ABQ	Alcohol Beliefs Questionnaire
ACI	Alcohol Clinical Index
ADD	Alcohol Dependence Data
ADS	Alcohol Dependence Scale
AEQ	Alcohol Expectancy Questionnaire
ASI	Addiction Severity Index
ASIST	A Structured Addictions Assessment Interview for Selecting Treatment
AUDIT	Alcohol Use Disorders Identification Test
AUDADIS	Alcohol Use Disorder and Associated Disabilities Interview Schedule
AUI	Alcohol Use Inventory
CAGE	Cut down, Annoyed, Guilt, Eye-opener
CBI	Coping Behaviour Inventory
CDAP	Chemical Dependency Assessment Profile
CDP	Comprehensive Drinking Profile
CDT	plasma carbohydrate deficient transferase
CGT	plasma gamma glutamyl transferase
DASES	Drug Avoidance Self-Efficacy Scale
DAST	Drug Abuse Screening Test
DATAR	Drug Abuse Treatment for AIDS Risk Reduction
DEQ	Drinking Expectancy Questionnaire

DICA-R	Revised Diagnostic Interview for Children and Adults
DIS	Diagnostic Interview Schedule
DOPERS	Drug Offender Profiles: Evaluation and Referral Strategy
DOPI	Drug Offender Profile Index
DRInC	Drinker Inventory of Consequences
DTCQ	Drug Taking Confidence Questionnaire
DUSI	Drug Use Screening Inventory
4 P's	Four P's
GMAST	G-Michigan Alcohol Screening Test
HSQ	Health Screening Questionnaire
HSS	Health Screening Survey
IAP	Individual Assessment Profile
ICD-10	International Classification of Diseases Screener
ICS	Impaired Control Scale
IDS	Inventory of Drinking Situations
IDTS	Inventory of Drug Taking Situations
LDH	Lifetime Drinking History
MALT	Munich Alcoholism Test
MAST	Michigan Alcohol Screening Test
MCMI	Millon Clinical Multiaxial Inventory
ME revised	Manson Evaluation Revised
MMPI	Minnesota Multiphasic Personality Inventory
NAEQ	Negative Alcohol Expectancy Questionnaire
OPI	Offender Profile Index
PRISM	Psychiatric Research Interview for Substance and Mental Disorders
Q/F	Quantity/Frequency Method
QIAD	Quantitative Inventory of Alcohol Disorders
RAATE	Recovery Attitude and Treatment Evaluator
RDS	Restrained Drinking Scale
RTCQ	Readiness to Change Questionnaire
SAAST	Self Administered Alcoholism Screening Test
SADD	Short Alcohol Dependence Data
SADQ	Severity of Alcohol Dependence Questionnaire
SASSI	Substance Abuse Subtle Screening Inventory
SASST	Self Administerd Alcoholism Screening Test
SCID	Structured Clinical Interview for Diagnosis
SCQ	Situational Confidence Questionnaire
SDS	Severity of Dependence Scale
SMAST	Short MAST
SOCRATES	Stages of Change Readiness and Treatment Eagerness Scale
SUDDS	Substance Use Disorder Diagnosis Schedule
T-ACE	Tolerance, Annoyed, Cut-down, Eye-opener
TLFB	Timeline Followback Procedure
TRI	Temptation and Restraint Inventory
TWEAK	Tolerance, Worried, Eye-opener, Amnesia, Cutdown
VAST	Veterans Alcohol Screening Test

PART 1: PREVALENCE AND ASSOCIATION WITH CRIME

Survey studies and reviews consistently conclude that alcohol problems (e.g. Anglin, 1992; Greenfield and Weisner, 1995; Walfish and Blount, 1989), drug problems (e.g. Harrison and Gfroerer, 1992; Nurco, Hanlon and Kinlock, 1991), and a mixture of the two (Miller and Welte, 1986) are associated with crime.

Establishing prevalence of substance abuse problems among federal offenders has been greatly facilitated by the foresightful instituting of routine screening of new prison admissions using the Computerized Lifestyle Assessment Instrument (CLAI), a multidimensional assessment that includes the Alcohol Dependence Scale (ADS; Skinner and Horn,1984), the Drug Abuse Screening Test (DAST; Skinner, 1982), and other indicators of substance abuse (Robinson, Porporino and Millson, 1991; Robinson, Fabiano, Porporino, Millson and Graves, 1992; Weekes, Fabiano, Porporino, Robinson and Millson, 1993).

Typical findings from repeated sampling of this large and growing database show that 35% of incarcerated male offenders report low severity alcohol problems; 9% report intermediate level problems; and 8% show substantial to severe alcohol problems as defined by ADS's score. Approximately 20% report low levels of drug problems; 12% intermediate severity problems; and 16% report substantial to severe drug problems as judged by DAST score.

If one considers intermediate and substantial to severe levels to correspond to substance abuse and substance dependence respectively, as defined by DSM III (and generally by DSM IV) respectively, then the 17% who fall into these categories according to the ADS is some what higher than the13.1% reported for a random sample of U.S. state offenders identified by the Diagnostic Interview Schedule (US Bureau of Justice Statistics, 1983a). A similar breakdown in terms of drug abuse/dependence shows 28% for the DAST and 16.8% for the Diagnostic Interview Schedule (US Bureau of Statistics, 1983a). Robinson et al., (1991) note that the higher percentages for Canadian offenders may be due to their greater access to substances as the ADS and DAS anchor the assessment to the six months prior to their current arrest. Alternatively, they suggest that these two computerized instruments encourage offenders to reveal their drug use problems. A third possibility not considered by the authors is that since these scales have well

established reliability and validity with offender and non-offender populations they are simply better at identifying substance abuse problems than the Diagnostic Interview Schedule.

On the other hand, using the same categorical approach, results from an earlier study by Lightfoot and Hodgins (1988), utilizing the ADS and DAST as part of an interview survey with volunteer offenders, reported very high percentages of 47% in the alcohol abuse/dependence category and 63.5% in the substance abuse /dependence category. Robinson et el. reasonably note that these higher percentages are likely due to a self-selection bias as the primary purpose of the study was to collect information of value in developing substance abuse programming options; a feature of which subjects in the study were aware.

When alcohol and drug indicators on these two assessment instruments are combined to show the proportion of offenders who have one or the other of these problems, 32% show low severity problems; 16% intermediate problems; and 20% substantial to severe substance abuse problems (Weekes, Moser and Langevin, 1997).

Among female offenders the rate of alcohol problems identified using the ADS and DAST as part of a structured interview appears to be lower than in male offenders with 72% reporting no alcohol problems; 15% intermediate level problems; and 12.5% substantial to severe alcohol problems. About 11% report low level drug problems; 19% intermediate level problems; and 35% substantial to severe drug problems (Lightfoot and Lambert, 1991).

A test of the CLAI with a sample of Aboriginal offenders (Vanderburg, Weekes and Millson, 1994, as cited in Weekes et al., 1997) showed that while prevalence and severity of drug problems were the same as in non-Aboriginal offenders, the Aboriginal offenders had more serious alcohol problems (almost 75%).

In summary, excellent data from Correctional Service Canada show a high rate (about two-thirds) of some degree of substance abuse problems in incarcerated federal offenders.

With the large percentage of incarcerated offenders showing substance abuse problems, and the large percentage of offenders who report some degree of intoxication from drugs and/or alcohol while committing their crime (Weekes, Moser, & Langevin, 1997), it is not difficult to

argue for an association between substance abuse and crime. However, the nature of this association is complex and controversial and a review is beyond the scope of this report. Some argue that substance abuse causes crime, either through acute situational use or through chronic use, others that substance abuse is the result of a deviant criminal lifestyle, and still others that a third factor (e.g. genetics) contributes to both criminality and substance abuse (Bradford, Greenberg and Motayne, 1992; Collins, 1982; Goldstein, 1985; Hammersley, Forsyth, Morrison and Davies, 1989; Harrison and Gfroerer, 1992; Pernanen, 1982; Risser, Bonsch and Schneider, 1995; Speckart and Anglin, 1986; Smith and Newman, 1990; Walfish and Blount, 1989). Complex interactional models and reciprocal relationships between substance abuse and crime also are possible.

Regardless which model eventually predominates, the question of whether correctional substance abuse treatments have an effect on reducing crime can be independently evaluated. In this respect the evidence is quite encouraging (Annis, 1988; Field, 1989; Inciardi, 1995; Millson, Weekes and Lightfoot, 1995; Parnanen, 1981; Vigdal, Stadler, Goodrick and Sutton, 1980; Wexler, Falkin and Lipton,1990). Further improvements are likely to occur as clinical researchers get better at matching particular substance abusing offenders to particular treatments that are suitable to their needs. The strategy of treatment matching evolved from the recognition that substance abusers in general were not a homogenous group and that great variability existed, not only in the substances abused, but in the severity of the abuse and in many other areas of their lives related to substance use and to their response to treatment (Allen & Kadden, 1995; Miller, 1986; Project MATCH Research Group, 1997). If these factors are to be considered, assessment that can differentiate them is critical.

This paper reviews the various measures that have evolved for substance abuse assessment in offender and non-offender populations and examines the substance abuse domain indicators of the 'Case Needs Identification and Analysis' instrument currently being tested by Correctional Service Canada.

PART II: ASSESSMENT OF SUBSTANCE ABUSE IN OFFENDER POPULATIONS

Overview

The present review of substance abuse assessment measures for use in offender populations will begin with a cursory introduction to assessment of substance abuse generally. Brief attention will be given to the issues of the purpose or rationale underlying assessment, the content and techniques available for assessment, and general methodological issues in psychometric assessment -- substance abuse-related and otherwise. Following, issues particular to assessment in offender populations will be introduced, with some attention paid to special sub-populations. Next, the instruments themselves will be described and evaluated; finally, a detailed examination of the 'Case Needs Identification and Analysis' instrument, currently in use within the Correctional Service of Canada (CSC), will be presented.

Assessment of Substance Abuse in the General Population

Purpose of Assessment. A number of purposes underlie the assessment process. Some of these are relevant to assessment across general substance abuse populations, while other purposes are particularly suited to, or take on a different twist in, special populations such as criminal justice populations. These differences will be duly noted in the following sections.

A main purpose of assessment of substance use is to identify those with a substance abuse problem (i.e., dependence or abuse), with an eye to providing treatment, or with an eye to providing appropriate treatment. To clarify this distinction, the Institute of Medicine (1990) has stated that "A major conclusion from the substantial body of research on treatment outcome in this field is that there is no single treatment approach that is effective for all persons with alcohol problems...This being so, for optimal treatment, matching is not optional but is required. Assessment provides the basis for matching" (p. 242). On the other hand, some types of treatment have proved to be -- across the board -- more generally effective than have others (Hester & Miller, 1995). Thus, the issue of the efficacy of treatment-client matching has plagued the general psychotherapy literature for some time.

However, as the Institute of Medicine points out, assessment eliciting information for the purpose of treatment matching is only useful if a variety of treatment options are available.

Additional purposes of assessment include pre-treatment/baseline data collection, and the amassing of a database of information for particular populations of interest. These alternate purposes may necessitate the collection of different kinds of information. For example initial assessment should: a) determine the presence or absence of the problem; b) determine the extent of the problem along several dimensions (discussed further below); and c) provide information useful in assignment to any treatment options, if options are available. Initial assessment may thus include a number of static/history variables and dynamic variables, and content will include both direct substance abuse variables, and those known to be related to substance use or to impact on a client's ability to benefit from treatment. Alternatively, pre-treatment/baseline data is usually gathered in order to evaluate the effect of the intervention on the client, and should thus consist of variables amenable to change and measures sensitive to such change; the focus will typically be on direct substance abuse variables. Finally, in establishment of a database, there is a need to collect a much broader base of information, some of which will represent static historical and demographic variables, and some of which will move beyond the realm of the substance abuse itself and substance abuse-related areas.

A further goal in assessment, particularly assessment geared with specific treatment options in mind, is that of paving an easier path to intervention. Cooney, Zweben, and Fleming (1995) review a study in which individuals assessed received either feedback on the severity of their alcohol problem and were offered referrals, or received no feedback at all. The feedback/referral group fared better at 12-month follow-up, indicating that feedback or referral had some impact. Miller's motivational interviewing framework is based on the notion that feedback on assessment results can move individuals closer toward acceptance of treatment.

Thus, an assessment process may serve the additional function of providing a brief, early contribution to intervention (Miller, Westerberg, & Waldron, 1995).

***Staging and Content of Assessment*.** The Institute of Medicine (1990) has devised a useful framework for conceptualizing the process of assessment. This framework includes a

sequential aspect and a multidimensional aspect. The sequential aspect specifies a three-stage assessment process: A screening stage (Is there a problem?), a problem assessment stage (problems that are attributable to the substance use), and a personal assessment stage (problems that are not attributable to the substance use); each of these stages is viewed as critical to a comprehensive assessment. Cooney et al. (1995), and Miller et al. (1995) also note the important distinction between a screening and a full assessment. Each stage is uniquely important. For example, if the individual does not have a substance abuse problem, administering lengthy and expensive assessment tools to quantify the problem is not necessary. Thus, a standard, compulsory, lengthy battery administered to all individuals in a given population, such as a correctional population, is not cost-effective unless the primary goal is to establish an informational database. On the other hand, Miller et al. (1995) are clear that screening instruments are woefully inadequate to the task of a proper assessment. They highlight in particular the dichotomous nature of such instruments (i.e., one is classified as either substance dependent/abusing or non-dependent/non-abusing) as over-simplifying the multidimensional nature of substance abuse and dependence, and further over-simplifying the continuous nature of each of those dimensions; they note the recent movement toward a continuum-conceptualization of many psychiatric diagnoses. They also note that, in many clinical settings, screening instruments are the norm when more complete assessment batteries should be employed.

According to the Institute of Medicine (1990), the multidimensional aspect of the assessment refers to the need to explore a number of domains within the latter two stages. Within the problem assessment stage, these would include level, pattern, and history of use; signs and symptoms of use such as tolerance, withdrawal, neglect of alternate activities, compulsion, continuing to drink despite adverse consequences, drinking to produce relief, narrowing drinking repertoire, and feelings of being out of control; and consequences which may be medical, psychiatric, family, work/educational, legal, or financial. Within the personal assessment stage, a wide range of areas should be screened initially for potential problems, and then focused in on if a problem is suspected. Such areas may include family, marital, vocational, sexual, personal, medical, or psychiatric problems, and assessment of social supports, family structure, and use of leisure time. In addition, this body recommends the collection of demographic information, and

assessment of personality, cognitive functioning, family history of substance use, stressful life events and situational factors, social stability, and prior treatment history.

Miller et al. (1995) also outline a number of content dimensions to be covered during the assessment stage (with specific reference to alcohol use). These include: alcohol use; negative consequences of use; alcohol dependence; family history; neuropsychological functioning; and physical sequelae. These authors echo the recommendation of the Institute of Medicine (1990) that broader psychological functioning also be assessed. Sobell, Toneatto, and Sobell (1994) and Lightfoot (1995) emphasize the need to cover the following dimensions: Recent substance use; antecedents and consequences of use; substance use history; psychiatric comorbidity/life problems; medical problems; and potential barriers to change.

Thus, from the above descriptions, it is clear that assessment may include brief, single-dimension screener instruments; multi-dimensional substance use measures or inventories (the length of which may vary widely across inventories); or broad, full assessment batteries which incorporate both substance use measures and the measurement of variables purported to have some use in the treatment of clients with substance use problems. The present report will include detailed reviews of both screener and multi-dimensional substance use measures. In addition, a selection of the broader lifestyle batteries will be addressed; such batteries almost always contain one or more of the screeners or inventories to be reviewed in the other two sections, and the reader will be referred to those sections when appropriate.

Assessment Techniques. A number of approaches to assessment of substance abuse are in current use. Most techniques consist of either self-report, observer report, or both; the information may be gathered via written questionnaire, behavioral ratings or recordings, face-to-face interviews (structured, semi-structured, or open-ended; administered by clinical or non-clinical staff), or computer-administered protocols (straight-through or looped protocols, with the option of mid-protocol client feedback in some cases). Additionally, laboratory tests can tap biological markers of current and chronic use of certain substances.

The greatest source of debate surrounding optimal information gathering techniques seems to concern the validity of self-report data. Frequently, the questioning of the integrity and

validity of self-report data is pitted against the limited information accessible through observer report, and the limited or questionable sensitivity and time-frame constraints of biological markers. While Sobell et al. (1994) have noted the general accuracy of self-report in substance abusers, and the greater accuracy of the clients themselves over collateral reporters, Wish (1988) reviewed data supporting the claim that *offenders in particular* underreport their drug use when reports were compared to urinalysis. Lightfoot (1995) echoes this possibility, but also notes that some offenders may exaggerate substance abuse problems in order to lessen criminal responsibility. However, this may not be a major problem after admission to prison (Weekes, Moser, & Langevin, 1997). In any case, the Institute of Medicine (1990) makes an excellent point in stating that "Verbal reports are inherently neither valid nor invalid; rather, their validity varies, depending on circumstances" (p. 263). The Institute of Medicine (1990) lists the following factors that systematically affect (decrease) the validity of self-report: a) the client has a positive blood alcohol level during assessment; b) the client is experiencing withdrawal during assessment; c) the assessment includes unstructured, general, vague inventory items; d) the client is not aware of cross-checking of data provided; e) the clinician has only brief contact with the patient; f) the client has a motive to distort information; g) the client is concerned about confidentiality; and h) the clinician conveys obvious expectations for certain behaviours. In a correctional setting, points *f* and *g* may be particularly problematic and have to be considered carefully (Lightfoot, 1995). Cooney et al. (1995) note that the accuracy of self-report depends on cultural norms, the institutional setting, who is present at the assessment, demand characteristics of the situation, perceived attitude of the interviewer, client's state of sobriety, client's motivation, and cognitive functioning. Weekes, Moser, and Langevin (1997) have concluded that, in general, self-reports tend to be fairly accurate and are therefore a useful and valid source of information, but that collateral sources are recommended to support self-report data.

With respect to how the information (self-report or otherwise) is gathered, the Institute of Medicine has noted the rapport advantage of face-to-face interviewing, but also noted that the neutrality of pencil and paper tests, or those same tests administered by computer, can elicit greater acknowledgement of sensitive problem areas (see also Cooney et al., 1995). In addition, face-to-face approaches can be relatively unstructured, at least compared to a pencil or computer, and the data produced in an interview may be difficult to record, score, quantify, and compare to

standardization data. A highly structured interview approach may overcome some of these difficulties and has been shown to be reliable over time. However, the personnel and time required to carry out this approach render it an expensive strategy; these costs are lessened through a pencil and paper approach, although scoring the tests requires personnel time. Computer-administered batteries have the advantage of saving on personnel resources, and can take the form of a highly structured interview, such that certain pieces of the battery may only be administered under certain circumstances. Thus, one might implement the sequential stage approach to assessment through computer. For example, if

there is no indication through administration of a brief screener that alcohol is a problem, the lengthier alcohol batteries might be omitted.

Cooney et al. (1995) review a sampling of studies comparing information-gathering methods. Findings indicate concordance across clinician and non-clinician driven face-to-face interviews, and across pencil-and-paper versus computer-administered assessment, with respect to sensitivity and specificity on the CAGE and S-MAST. Cooney et al. (1995) note the cost-efficacy of computer or paper and pencil tests, and also note that clients seem to enjoy the computer format. Erdman, Klein, and Greist (1983) found that computer results were comparable to those obtained by pencil-and-paper format, but that the computer outperformed the pencil-and-paper test in its ability to detect logically inconsistent responses. They also note that their sample preferred the computerized assessment. Skinner and Allen (1983) observed that the computerized version of the MAST was preferred by individuals with good visual-motor performance skills, and was least preferred by individuals with higher levels of education and higher levels of defensiveness.

Development of psychometric instruments. Miller et al. (1995) have commented that "there are literally hundreds of published instruments for use in assessing alcohol problems" (p. 68) -- and the list grows when expanded to those employed to assess use of a wider variety of substances. They also note the lack of good data, particularly psychometric data, on many if not most of these instruments -- a criticism echoed by many researchers in the field of substance abuse. The Institute of Medicine stated that "ideally, information gathered during an assessment will be quantitative, reliable, valid, standardized, and recordable" (p. 261). This section reviews

some of the problems in, and barriers to, development of sound measures to assess substance abuse.

Quantitative versus Qualitative Information. Assessment instruments produce data intended to inform decision-making of some sort. These data may be quantitative or qualitative in nature. Quantitative data provide a numerical summary of such indices as the presence or absence of a problem; the severity of that problem; number of symptoms present; and frequency of various symptoms. These summary data may apply to general constructs (e.g., substance abuse) or more narrow, specific constructs (e.g., the effect of substance abuse on occupational functioning). Qualitative data may also address both general and more narrow constructs, but do not provide a numerical summary of those constructs; rather, the purpose is to describe the individual or group under investigation. The development of both solid quantitative and qualitative assessment instruments requires methodological rigour, but the criteria of adequate rigour vary. While the bulk of the instruments described below *may* offer some qualitative information particularly useful in the treatment process, they are used primarily as quantitative indices. Thus, this section reviews standards of development with respect to quantitative measures.

With respect to the foundation upon which an assessment instrument is built, there exist a number of schools of thought. Some have taken a rational/theoretical approach, in that they have generated items consistent with their theoretical view of the construct (e.g., measures based on the domains identified as the alcohol dependence syndrome). Others have opted for strong external validity, generating items through conducting unstructured or semi-structured interviews with the population to which they wish the measure to apply, and have derived scale items from interview content (some measures of alcohol expectancy are based on such derivations). Typically, these two approaches contain fairly face valid items. (A "face valid" item is one which measures exactly what it appears to measure, for example, "I am concerned that I cannot control my drinking"). Still others have taken a purely empirical approach; frequently, this will involve the researchers' generating items themselves and compiling items from myriad previous measures of the construct of interest, then subjecting these items to field-testing. Items which are able to discriminate the target population and which meet rigorous psychometric standards (to be

described subsequently) are retained, whether or not they possess face validity. The Minnesota Multiphasic Personality Inventory (MMPI) is probably the best-known example of this approach. There is no consensus with respect to which of these approaches is superior, and the debate varies across subject areas. However, it is important that the test developer be clear about the approach underlying his or her test, so that those choosing a test can evaluate whether the test construction meets their own requirements. However, regardless of the basis for item generation, any assessment instrument should possess some basic psychometric properties; these properties will now be outlined briefly.

Some instruments reviewed below represent single dimension constructs, that is, they purport to assess one relatively homogeneous aspect of substance use (e.g., frequency of use). Others however, contain a number of subscales, and represent several aspects of substance use. While some multi-dimensional measures are theoretically based, it is important that these dimensions (a) be empirically validated as distinct dimensions; and (b) that the relationships between the dimensions be clarified. Factor analytic work and, in some cases, structural equation modelling, provide a means of establishing the validity of multiple dimensions. In particular, one may wish to ensure that items load (only) onto the factors (subscales) of which they are purported to be a part, and that inter-factor correlations are not so high as to render factors redundant to one another. Factor analysis also provides a means of testing theoretical models of substance use.

Reliability. It is important that assessment instruments be reliable. Reliability can have a number of meanings. One type of reliability is internal consistency, a measure of how well the items of a scale come together to measure a single construct; it is based on the intercorrelations among all items. Internal consistency is measured by Cronbach's alpha coefficient (known alternately as alpha, coefficient alpha, Cronbach's alpha); this statistic may range from 0.0 to 1.0, with higher values indicating greater reliability. Typically, one hopes for values of .80 or greater, but values of .70 are sometimes deemed acceptable. Split-half reliability is very much like internal consistency and is, in fact, somewhat redundant to it; it assesses the degree to which one half of the test, when randomly split, correlates with the other half. Acceptable values are very similar to those indicated for Cronbach's alpha. Test-retest reliability is a measure of the

relationship between a test score at one administration and the score on the same test at a second administration, with some time delay in between. Alternate form reliability is the extent to which two parallel forms of a test are related; this is of particular interest in the present review with respect to the equivalence of short versus full-length forms of scales.

Validity. It is equally important that assessment measures possess validity. Again, a variety of "validities" are relevant. Content validity refers to whether or not the content of the test items fully represent the construct being assessed; that is, has the domain been adequately and fully sampled, and are the items appropriate to the domain?. Construct validity is the extent to which the instrument is believed to measure the construct it claims to measure. For example, does a scale purported to measure alcohol dependence syndrome truly measure the dimensions of that syndrome as they are theoretically defined? Construct validity is typically established by relating the test to theory, or by factor analytic work to establish multiple dimensions. Criterion-related validity refers to the extent to which the scale is related to some type of criterion or outcome measure. Two sub-types of criterion-related validity are concurrent validity and predictive validity. Concurrent (diagnostic) validity refers to whether the test is correlated with some already existing measure of the construct of interest, often a "gold standard" measure in the field. Frequently, one is interested in concurrent validity when one wishes to replace a more onerous assessment process with something briefer or more efficient. Predictive (prognostic) validity is the extent to which the instrument accurately predicts outcomes deemed important to the construct, for example, likelihood of relapse after treatment; this would seem to be particularly relevant to the context of CSC, where emphasis is placed on the reduction of criminal recidivism.

Sensitivity and Specificity. Many of the instruments reviewed below are used (correctly or not) to render a diagnosis; that is, we wish to answer the question: Does the individual have a substance use problem? The property of discriminative validity is critical to answering this question, and two sub-classes of discriminative validity are typically reported. The sensitivity of an instrument refers to the rate at which it correctly detects a problem; for example, a particular screening instrument may pick up 95% of those with alcohol problems. However, a sensitive test may well produce numerous false positives, that is, identify those as "alcohol abusers" who do

not have a problem. The specificity of an instrument refers to the rate at which the test identifies only those who really *do* have the problem of interest; that is, if the test produces a positive result, we can be very sure that the individual does have a substance abuse problem. However, a test with high specificity may well be insensitive, resulting in a failure to identify many of those with the problem, producing many false negatives. Ideally, a test will possess both high sensitivity and high specificity; the reality, however, is that one is frequently sacrificed for the other. Whether one elects to esteem sensitivity over specificity or vice versa, depends upon the purpose of the assessment and the consequences of false positives and false negatives in a given context.

Normative Data. Finally, it is useful for the developers of an instrument to amass a good solid base of normative data. Normative data derive from using the instrument on (ideally) large samples and establishing psychometric properties, average scores, and typical score spread, within these populations. Ideally, a substance use instrument is accompanied by normative data for a wide variety of samples (e.g., community samples, college samples, social drinkers, problem drinkers, psychiatric populations, various age and gender groups, etc.); most critically, however, one wishes to select a test for which normative data exist that are relevant to the population of interest. For correctional contexts, this would mean selecting instruments validated on inmates, parolees, female offenders, and any additional sub-populations of interest such as native populations, juvenile offenders, etc.

Issues Specific to Adult Criminal Populations

We have addressed the issue of why to assess for substance abuse generally, but the question of why to assess substance abuse in offender populations in particular deserves attention. The answer to this question may seem self-evident, but it is important, at this point, to state the assumption that we assess for substance abuse for the purpose of treating the problem. The assumption that follows, then, is that we treat substance abuse in correctional facilities because we assume a decrease in abuse will result in a decrease in recidivism in criminal activity post-release. Part I of this review notes that the relationship between substance abuse and crime is a complex one. However, evidence points to the fact that reducing or eliminating substance abuse reduces crime.

The assumptions underlying assessment of substance abuse lead to one obvious difficulty posed in offender populations. The eventual purpose is to be able to provide appropriate treatment, but these individuals did not present in the setting for the purpose of seeking substance abuse treatment. Cooney et al. (1995) note that "a different approach is needed when you begin to address drinking with those individuals who are not seeking help". In particular, the validity of the assessment may be threatened when coercion is perceived. In general, however, there is good evidence that self-reports provided by such instruments as the Computerized Lifestyle Assessment Inventory paint a relatively accurate picture of substance abuse among federal offenders (Weekes, Moser, & Langevin, 1997).

Special Sub-Populations

Women. Canale (1996) has documented some characteristics of substance use and abuse patterns particular to women. For example, compared to men, women are more likely to use both over-the-counter and prescription benzodiazepines and opiates for both physical and psychological symptoms; they are more likely to take these medications concurrently with alcohol; they are more likely to develop non-alcohol drug dependence before developing problems with alcohol use; and they are less likely to use illegal drugs. Kinney (1991) echoes these differences, and adds to them the greater likelihood of women to use drugs in combination; to have a substance use history characterized by a cyclical pattern; and to have a substance-abusing partner. Given these differences, it would seem critical to incorporate certain key items in any inventory developed for the assessment of substance abuse in women. Such items should: address the use of prescription medication, particularly anxiolytics and anti-depressants *not necessarily obtained through illegal means*; assess substance use over a fairly extended period of time, given its cyclical nature; assess polydrug use; and assess pressure from a partner to use substances.

Canale (1996) has also put together topic areas to cover during a substance use assessment with female clients. In addition to the usual substance abuse items (i.e., frequency, amount, type, patterns, consequences of use, treatment history, family history, triggers, and degree of dependence), a number of other domains are recommended. These include general physical and mental health history, physical and other abuse history, living arrangements, social support, ethnocultural variables, financial circumstances, legal issues, education/work circumstances, current life events, and goals. Two specific screening tools are suggested for use with women, the Women's Health and Drug Use Questionnaire, and the TWEAK Test; the TWEAK is described below in the test review section, but it should be noted that it is a brief screening instrument, and can in no way be seen to provide full assessment addressing the issues specific to women documented above. Hodgins and Lightfoot (1988) have successfully utilized the ADS and DAST (also reviewed below) with female offenders.

This special focus notwithstanding, the Institute of Medicine (1990) reviewed the literature and concluded that "In general, in treatment for alcohol problems, males and females with comparable sociodemographic characteristics (marital status, employment, social stability, etc.) and at the same levels of problem severity appear to do equally well in the same treatment settings" (p. 356). However, these authors, as do those cited above, note some differences in the presentation of substance abuse problems in women. They note, with specific reference to alcohol, that women are more likely than men to have primary affective disorders, liver disease, marital instability, instability of family of origin, spouses with alcohol problems, lower self-esteem, a pattern of drinking in response to major life crises, a history of sexual abuse, opposition to treatment from family and friends, and more child care responsibilities. When dealing with populations of female offenders, it may be useful to assess which of these variables might impact on treatment outcome, and which of those might be amenable to treatment in their own right.

Aboriginal Peoples. Most of the literature available on assessment and treatment of substance abuse in Aboriginal populations has as its referent Native Americans (e.g., Kinney, 1991). How well this literature generalizes to Aboriginal Canadians is not clear. Weekes, Morison, Millson, and Fettig (1995) reported on a study in which they assessed the validity of

the Millon Clinical Multiaxial Inventory (MCMI) in Canadian Aboriginal populations. The MCMI achieved similar psychometric properties (alpha = .84) and factor structure (four-factor solution) to those derived from Caucasian populations. Weekes et al. (1995) recommend the use of the substance abuse portion of this instrument in Aboriginal offenders. However, difficulties with use of the MCMI and similar diagnostic schedules are noted below. The Computerized Lifestyle Assessment Inventory (CLAI) has also be used in Canadian Aboriginal populations (Vanderburg, Weekes, & Millson, 1994). The Addiction Research Foundation has designed treatment manuals with aboriginal populations in mind (Bohm & Sharma, 1987).

Timing of Assessment in Correctional Settings.

One major issue in the assessment of substance abuse in offender populations is the timing of assessment; more specifically, there is a need for attention to content appropriate to different times of assessment. The nature of the current incarceration process results in a number of periods of delay between arrest, conviction, institutional assignment, and participation in the determined appropriate treatment programming, and in considerations concerning substance abuse at the time of release. These delays can impact on the appropriateness of many substance abuse instruments for a number of reasons. First, some of the instruments have been developed such that respondents report substance use behaviours and consequences of substance use with respect to a number of weeks or months immediately preceding the time of testing. If the individual has been incarcerated for that period of time, psychometric assessment may not indicate the severity of the problem, as access to certain substances may have been limited by circumstance. Second, if the offender is assessed early on in the justice process, so that the preceding weeks do cover time prior to incarceration, there may be quite a delay before any intervention programme is offered to the offender. Thus, the information provided at the time of assessment, particularly with respect to knowledge and attitudes, may no longer be accurate by the time the treatment programme begins. Third, if the instruments are modified so that they can be administered shortly before assignment to a treatment programme, and have the offender recall behaviours and consequences from the period prior to incarceration, accurate recall may be compromised. This latter issue might be addressed by a simple research study, in which a sample

of offenders completes the instruments in question at the time of initial incarceration, and again at the time the offender is being assigned to a treatment programme.

It would seem reasonable, then, to suggest that the offender be assessed on different variables appropriate to the different time points in his or her incarceration. A comprehensive, initial assessment which takes place early on in the incarceration process should be focused on historical (static) variables, substance use behaviour and related coping behaviours, and observed consequences of substance use; some coverage of the offender's knowledge and attitudes with respect to substance use would be useful as well in facilitating preliminary assignment to the appropriate level/intensity of treatment. In Correctional Services of Canada, this initial comprehensive assessment is currently accomplished by use of the CLAI and the Case Needs Identification and Analysis instrument. Later in the process, shortly before participation in treatment, assessment of specific knowledge and attitudes is critical, as these are the kinds of variables which are amenable to measurable change in an institutional setting. That is, immediately post-treatment, assessment of substance use behaviours and consequences cannot serve as very useful indices as the offender does not have the same access to substances that he or she might have once released. Currently in CSC, these assessments vary with the treatment offered. The most thorough assessment of pre-post treatment changes is likely associated with the OSAPP programme (Lightfoot, 1993; Millson, Weekes, & Lightfoot, 1995). Assessment of substance abuse behaviours and consequences would be more appropriate to the post-release period, and such follow-up is recommended.

The present review is focused largely on assessment tools to be incorporated into the initial, comprehensive assessment. Those who carry out substance abuse treatment programmes have frequently developed their own sets of measures quite specific to the particular programme goals. For example, the CHOICES Programme (Lightfoot & Boland, 1993) and the Offender Substance Abuse Pre-Release Programme (OSAPP; Lightfoot, 1993; Millson, Weekes, & Lightfoot, 1995) in Ontario have developed measures to assess the domains targeted within their respective interventions. It is the more widely used and validated instruments which are of concern in the present report. However, we have included a section addressing well-recognized instruments designed to tap dimensions which might be particularly useful to individual

treatment planning. These instruments might assess, for example, motivation for change, self-efficacy with respect to success in a drug treatment programme, beliefs and attitudes about the consequences (both positive and negative) of drug use. It is our belief that addressing these variables is critical to success in drug treatment programmes, thus individual assessment of such variables is critical.

Assessment Instruments

The instruments reviewed below have been selected for their prominence in the literature and the extent of data available on each of them. In keeping with the important distinction made above, between screening instruments and longer inventories, the present review has been partitioned into a number of sections. In the first section, we review screening instruments, that is, those very brief measures designed to identify individuals likely to have a drug or alcohol problem. It is the intention of most developers of such instruments that a positive finding be followed up with more elaborate assessment of the nature of the problem and, finally, a further assessment to facilitate treatment planning -- thus, ideally, a stepped approach to assessment is recommended. The second section, therefore, focuses on instruments -- uni- or multi-dimensional -- which document the nature of an existing problem. In the third section, we review those instruments which assess specific problems which might be addressed in treatment, for example, motivation for change, self-efficacy with respect to the substance abuse problem, etc. In the fourth section, we review a number of existing broad assessment packages; these packages typically move beyond documentation of the nature of the specific substance abuse problem to assess strengths and/or weaknesses across a number of potentially related domains, such as general health, interpersonal functioning, etc. This is followed by a brief section for laboratory assessment procedures. Finally, the indicators of the substance abuse domain of the 'Needs Identification and Analysis' instruments used at admission and at release are reviewed in detail.

In the case of some instruments, there seems to be disagreement as to whether they are screening instruments, or whether they provide enough information to classify as assessment tools (e.g., the MAST). Additionally, within each of these sub-sections, some instruments tap into the use of a range of substances, while others focus specifically on a particular substance,

most frequently alcohol; still others may be adapted for use with both single or polydrug use. Within the sub-sections instruments are presented alphabetically.

An effort has been made to document and/or comment on the following properties of, and information about, each instrument: 1)Statistical and methodological quality of instrument development; 2) Rationale and/or theoretical premise underlying development; 3) Design, content, and scoring of the instrument; 4) Normative data; 5) Psychometric properties (internal consistency, test-retest reliability, validity, and factor structure); 6) Practical aspects of administration (e.g., time required, education level required for both the client *and* the test administrator; 7) Ability of the instrument to discriminate problematic substance use from non-problematic use; 8) Sensitivity of the instrument to change; 9) Generalizability to offender populations; and 10) Potential for integration of the instrument into a larger forensic assessment protocol. It should be noted that for very few instruments is this complete roster of information available. Further, for some instruments, we were unable to obtain the administration manuals, and thus were only able to discern that particular psychometric properties had been investigated but were not able to report precise values with respect to those properties. We have included as much precise information as has been available to us at the present time.

Screening Instruments

To reiterate, the purpose of screening instruments is to identify the presence (or likely presence) of a substance abuse problem. In the interest of efficiency, it would seem important that screening instruments be brief and simple both to administer and to score; more time can be spent in elaborating on and quantifying the nature of the problem, should the screener produce a positive result. Not all instruments denoted by their developers as "screeners" meet these brevity criteria. We have elected to review in detail those screeners that are brief and simple; longer identification protocols are reviewed in less detail in a summary sub-section at the end of this section of screening instruments.

Alcohol Use Disorders Identification Test (AUDIT)

Developed by the World Health Organization (WHO; Babor, de la Fuente, Saunders, & Grant, 1992), the AUDIT is a 10-item scale intended to identify problem drinkers, with a particular emphasis on related health hazards. It takes only about 2 minutes to administer. The items address consumption (frequency, binge drinking), dependence symptoms (inability to stop, drinking in the morning, blackouts, guilt), and alcohol-related problems (interference with life activities, injury to self or others, others expressing concern); items were selected to conform with the definitions of alcohol dependence and harmful alcohol use provided in the International Classification of Diseases -- 10th edition (ICD-10; World Health Organization, 1992). The term "harmful use" is considered equivalent to the term "abuse" used in other mental health classification systems, such as the Diagnostic and Statistical Manual of Mental Disorders. The temporal referent point is the past year, although some items refer to lifetime frequency, and are thus less sensitive to change than those anchored within a recent time period. Item responses are scored on a 5- or 6-point scale, depending on the item (0 through 4 or 0 through 5); a score of eight or more is considered indicative of problem drinking. The scale may be administered in written or spoken format, and a series of physical and laboratory findings are intended to supplement the self-report screener for purposes of problem elaboration. One major advantage of the AUDIT is that it was developed from data which discriminated high-risk drinkers in a study across six countries, and thus it has some cross-cultural validity. In addition, good psychometric data -- reliability (test-retest and internal consistency), validity (content, predictive, concurrent, and construct), and normative data -- are available (Sobell et al., 1994); the AUDIT was normed on "heavy drinkers" and alcoholics (Allen & Columbus, 1995). Cherpitel reports excellent sensitivity (.86 - .93) and specificity (.82 - .89). Sobell et al. (1994) also report good specificity and sensitivity using the recommended cut-off score of 8, and note the ability of the AUDIT to identify mild and moderate abusers, as well as those with severe problems. Despite its primary use in general medical settings, Allen and Columbus (1995) state the AUDIT to be appropriate for prison populations, and the WHO (Babor, de la Fuente, Saunders, & Grant, 1992) endorses this recommendation.

The WHO has also published the **ICD-10 screener**, an 11-item inventory whose items correspond to the six criteria for alcohol or drug dependence syndrome specified by the International Classification of Diseases, 10th Edition. Criteria domains include urges, difficulty in controlling use, withdrawal, tolerance, neglect of life activities, use despite adverse consequences. Fulfilment of three or more of the six criteria suggests some degree of dependence.

The CAGE

Developed by Ewing and Rouse (1970), the four-item CAGE (Cut down, Annoyed, Guilt, Eye-opener) has the advantage of extreme brevity -- administration takes about one minute. For the purpose of rapid screening, Kinney (1991) notes the CAGE as "the one to adopt", and it appears to be quite popular among medical professionals (Allen & Columbus, 1995). Areas assessed are feeling the need to reduce drinking, acknowledge others criticizing one's drinking, feeling guilty about drinking, and drinking first thing in the morning. Endorsement of each item receives one point, and a score of two or more suggests problem drinking. The instrument is typically administered orally by the clinician. While Cherpitel (1997) reports excellent sensitivity (.68 - .89) and specificity (.85 - .91), Cooney et al. (1990) and Kinney (1991) note that sensitivity generally ranges from 60-95%, and specificity from 40 - 95%; Kitchens (1994) notes an even broader range of values. Inciardi (1994) notes, however, that two "yes" answers will correctly identify 75% of alcoholics and accurately eliminate 96% of non-alcoholics, thus the two-question cut-off has been recommended. Reliability information has not been reported (Kitchens 1994). The CAGE has been criticized for its failure to assess current behaviour and level (frequency, amount, pattern) of alcohol consumption, although one might restrict time frame to assess more current behaviour and allow for sensitivity to change; that is, one could anchor the questions in "the past month" or "the past 6 months". Internal consistency and validity (predictive and concurrent) data are available. Norms are available (Allen & Columbus, 1995). Inciardi (1994) suggests that the CAGE is easily modified to assess use of substances other than alcohol by substituting "drug use" for "drinking" with respect to the first three questions, and changing the fourth ("eye-opener") question to "Do you use one drug to change the effects of another drug" or "Do you ever use drugs first thing in the morning to 'take the edge off'?".

Alcohol Clinical Index (ACI)

The ACI (Skinner, Holt, Sheu, & Israel, 1986) is a 54-item inventory developed to assist health professionals in identifying alcohol problems in patients. The four different sections are: Clinical signs (e.g., gait disturbance, cigarette burns); medical history (e.g., "Do you often wake up with a headache?"); the Alcohol Questionnaire (e.g., "On how many days in this typical month did you *not* have alcoholic beverages to drink?") and CAGE screening items (reviewed above); and early indicators and risk factors (e.g., "Concern or arguments by family members about the patient's drinking"). The ACI items were selected from a pool of items, and were those which best identified alcohol abuse in a Canadian sample, and could distinguish among outpatients with alcohol problems, social drinkers, and general family practice patients. The ACI requires a combination of pencil-and-paper, interview, and physical examination information gathering, and training is recommended for the administering health professional. Administration is said to require five minutes, and is scored by hand (no computer versions yet available). Allen and Columbus (1995) report work done on internal consistency and criterion (predictive and concurrent) validity, and general population norms are available. In distinguishing alcoholic outpatients from social drinkers, the developmental study produced a sensitivity of 75%, specificity of 93%, and 84% overall general accuracy. Further, ACI items were more successful at identifying alcohol problems than were laboratory biological markers (Skinner et al., 1986)

Michigan Alcohol Screening Test (MAST)

Developed by Selzer in 1981, the MAST is a 25-item self-report questionnaire; items are answered in a *yes/no* response format, and positive (problem) responses receive either a 2 or 5, depending on the item. Sample items include "Have you ever been in a hospital because of drinking?" and "Have you ever gotten into trouble at work because of drinking". A seventh grade reading level is recommended for the MAST (Inciardi, 1994). It can be administered in 5-7 minutes, and provides a single severity score. The MAST is frequently incorporated into larger inventories or structured interviews. Reliability and validity data are available across a number of populations; internal consistency ranges from .83 to .95, while test-retest reliability values range from .84 to .97 (Kitchens, 1994); lower values associated with longer delays between administration. The original normative male-only sample covered a wide age range and assessed

both clinical and non-clinical populations, and the popularity of the MAST has resulted in data available across numerous special populations, including offender populations (Millson, Weekes, & Lightfoot, 1995; Swett, 1984). The MAST boasts a specificity of 95% and a sensitivity of 98% in some samples (Kinney, 1991), but does range in sensitivity from 71 to 100% and in specificity from 81 to 96% in others (Kitchens, 1994). Further, the MAST has been criticized for its transparency (obvious face validity), but this criticism could apply equally to most assessment tools under review in the present report. Further, the MAST as it stands would appear to have little sensitivity to change, as most items are prefaced with "Have you ever...."; however, time-anchored modifications are possible. Some factor analyses of the MAST have revealed four and six factors (Parsons, Wallbrown, & Meyers, 1994); the four-factor structure has held across a number of samples, including a female offender population (Saltstone, Halliwell, & Hayslip, 1994). However, the MAST is generally considered to be a unidimensional instrument.

The original MAST validation sample of 526 included hospitalized alcoholics, drivers convicted of driving under the influence (DUI) or who had amassed numerous driving penalty points, persons convicted of drink and disorderly behaviour, and a control sample.

Modifications of the MAST include the 10-item **Brief MAST**, the 13-item **Short MAST** (SMAST), and the 9-item **Malmo** modification (Mm-MAST); these briefer instruments would seem perhaps more appropriate for screening purposes than would the original 25-item scale, although Cherpitel (1997) reports that the BMAST shows poor sensitivity (but good specificity -- values reaching .99) in some samples, particularly of African American individuals. In addition, the **G-MAST** was developed by Blow, Young, Hill, Singer, and Beresford (1991) for use with older adults. The **Veterans Alcoholism Screening Test** (VAST; Magruder-Habib, Harris, & Fraker, 1982) is also an extension of the MAST; it arose out of a need for charting alcohol problems over multiple historical periods. Thus, for each item, the respondent indicates a response with respect to the past year, the period of time between one and five years past, and the period of time preceding the past five year period.

Finally, the 35-item **Self-Administered Alcoholism Screening Test** (SAAST; Swenson & Morse, 1975) was modified to be of greater use in general medical settings. Two forms exist: one to collect information from the patient, and one for data collection from a friend or family member. The following domains are explored: Loss of control; occupational and social disruption; physical consequences; emotional consequences; concern on the part of others; and family history of alcohol problems. Both forms may be administered in pencil-and-paper or computer format, and take about 5 minutes to complete; no special training is required of the tester.

Psychometric work includes internal consistency, predictive and concurrent validity, and factor analysis for confirmation of the purported domains. Norms are available for different sex by age groups.

Trauma Scale

Developed by Skinner, Holt, Schuller, Roy, and Israel (1984), the Trauma Scale is a very brief (5-item) scale intended to assess injury associated with non-normative drinking (either abuse or dependence; Kinney, 1991). It has as its temporal referent point "Since your 18th birthday....". Sample items include "Have you been injured in a road traffic accident?" and "Have you injured your head?" Endorsement of 2 or more of the 5 items is suggestive of an alcohol problem. It is typically administered orally during an interview. Specificity of 81% and sensitivity of 68% have been reported for distinguishing outpatients abusing alcohol from social drinkers, with an overall accuracy of 74%; for detection of excessive drinking in family practice patients, overall accuracy was 70%, with a sensitivity of 67% and a specificity of 70%. Cherpitel (1997) has reported similar values. Kinney (1991) recommends it as a "highly effective screening device", although the authors of the scale suggest its use in medical settings in combination with laboratory tests; the two appear to boost specificity and sensitivity significantly in combination with one another. For use with offender populations, the Trauma Scale would be appropriately time-anchored (e.g., "In the six months before your incarceration...")

Health Screening Questionnaire (HSQ)

Also available in modified form as the **Health Screening Survey** (HSS; Fleming & Barry, 1991), the HSQ was developed by Wallace and Haines (1985). Both instruments are intended as more general lifestyle questionnaires (much as the larger CLAI). We will focus on the HSS for our present purposes. The impetus for the development of the HSS arose out of concern for individuals' masking of substance abuse problems when questioned directly. The authors believed that embedding drug and alcohol questions in a larger inventory examining a variety of health topics such as smoking, fitness, and nutrition may increase the validity of the responses, in that the questions would not elicit the same degree of defensiveness or denial that direct questioning might. In the alcohol section of the HSS, the CAGE has been incorporated, as well as frequency and use questions with the past three months as temporal referent, the Trauma Scale (reviewed above), and additional "problem drinking" questions which ask for the individual's self-perception of current or past problems with alcohol use, and physician communication to the individual of concern about alcohol use.

Psychometric validation of the HSS was carried out on three sub-samples of patients from substance abuse treatment centres and primary care centres, and their respective family members. For the two substance abuse centre samples, sensitivity ranged from .95-.96, with .78 for the primary care sample. Specificity ranged from .70 to .80 across the three samples. Revisions to the instrument did little to alter these values. Gender comparisons indicate that both versions have stronger internal consistency in the substance abuse samples for women, but that reliability is slightly greater for men in the primary care sample. In substance abuse centre samples, both versions of the HSS showed greater sensitivity and specificity for women, but showed greater sensitivity in men in the primary care sample; specificity was roughly equivalent across gender in the primary care sample. Overall, the HSS correctly identified 95% of alcoholic patients in treatment programs, and classified 78% of the primary care individuals. The revised version improved specificity without sacrificing sensitivity. Despite its promising properties, as an initial screener, the HSS is somewhat lengthy, and it does not incorporate the breadth necessary to be considered a broad assessment battery. In addition, it is perhaps less applicable to correctional settings than it would be to the general medical settings for which it was originally designed.

TWEAK, the T-ACE, and the Four P's

Developed by Russell (1994) as a modification to the CAGE, the TWEAK is a 5-item alcohol screener developed specifically for pregnant women, eliciting information about tolerance, concerned responses from significant others, drinking in the mornings, blackouts, and desire to reduce drinking. Endorsed items receive either 1 or 2 points, and a total score of 2 or more indicates potential problem drinking. Like the CAGE, the TWEAK is administered in interview format. Cooney et al. (1995) have noted that this instrument proved more sensitive than either the CAGE or the MAST in a large sample of African-American women, lending some weight to its use with women and with at least one ethnic minority group. Cherpitel also notes reasonable sensitivity (.83 - .91) and specificity (.81 - .86) in a culturally and geographically diverse U.S. sample. Sobell et al. (1994) note its adequate psychometric properties with respect to predictive and concurrent validity, although no reliability studies have been done, and its advantage over other screeners is that it uses the present as its temporal referent, rather than basing diagnoses largely on historical variables.

The T-ACE (Sokol, Martier, & Ager, 1989) represents an alternative modification of the CAGE, again for the purpose of assessing high-risk drinking in pregnant women. Like the TWEAK, the 4-item T-ACE also assesses tolerance, cutting down, and drinking upon waking, but substitutes annoyance at friends' expressed concern rather than the concern itself; the amnesia item is not included.

The four-item Four P's test (Ewing, 1992) was designed specifically for use with women, and assesses parental history of substances, partner's use of substances, the client's past substance use problems, and use of substances during a pregnancy (Cooney et al., 1995).

Allen and Columbus (1995) note that the TWEAK has been used generally in women of reproductive age, not just pregnant women; it would be interesting to investigate the validity of the T-ACE and the Four P's under similar conditions. Thus, under certain circumstances, these instruments may well be useful with female offenders.

Additional Screening Measures

A number of measures have been developed specifically to render diagnoses based on the criteria stipulated by the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; DSM-IV, American Psychiatric Association), or the International Classification of Diseases (ICD-10, World Health Organization, 1992). These are typically clinician-administered structured interviews, and they assess a wide spectrum of psychiatric and psychological problems. Among them are the **Structured Clinical Interview for Diagnosis** (SCID), also known as the **Psychiatric Research Interview for Substance and Mental Disorders** (PRISM; Spitzer & Williams, 1987); the **Revised Diagnostic Interview for Children and Adults** (DICA-R; Reich et al., 1990); the **Diagnostic Interview Schedule** (DIS; Robbins, Cottler, & Keating, 1989); and the **Alcohol Use Disorder and Associated Disabilities Interview Schedule** (AUDADIS; Grant & Hasin, 1992; Grant, 1996). In addition, the **Minnesota Multiphasic Personality Inventory** (MMPI; MacAndrew, 1965) and the **Millon Clinical Multiaxial Inventory** (MCMI; Millon, 1977) contain subscales which assess substance use. However, these instruments are long and time-consuming, and were developed for use mainly in psychiatric populations. For these reasons, they are not recommended as optimal instruments for use in screening, or assessing for treatment planning, of offender populations, although some have some history of use in the criminal justice system (e.g., the DIS; Breteler, Van Den Hurk, Schippers, & Meerkerk, 1996; and the MCMI; Weekes, Moser, & Langevin, 1997).

The **Munich Alcoholism Test** (MALT; Feuerlein, Ringer, Kofner, & Antons, 1977) was developed as a diagnostic tool. However, little literature exists on its use. Similarly, the **Quantitative Inventory of Alcohol Disorders** (QIAD; Ridley & Kordinak, 1988) was developed as a brief 22-item self-report screener, assessing frequency and amount of consumption, as well as alcohol-related problems in occupational, physiological, legal, emotional, and social domains. Psychometric properties seemed promising, and the scale had fairly good discriminative ability, but the test has not been marketed and there is thus little information derived beyond the very small original normative sample.

Finally, the 78-item pencil-and-paper (can be administered by computer) **Substance Abuse Subtle Screening Inventory** (SASSI; Miller, 1985) was developed out of concern about the potential for distortion of responses on substance abuse measures; the authors of the SASSI claim its resistance to efforts at faking. Allen and Columbus (1995) note the effectiveness of the SASSI in identifying early stage substance abuse in those who have not yet acknowledged their patterns to themselves. Some items require a true/false response, while others are endorsed with respect to frequency on a 4-point scale. Sample items include "I take all my responsibilities seriously" and "How often have you become depressed after sobering up?". Disadvantages of the SASSI as a screening instrument include its length. In addition, to date, we have not found much literature incorporating the SASSI, although it might be recommended as a useful research addendum tool for the purpose of investigating the question of faking on substance abuse measures; as noted above, this question may be of particular relevance to offender populations.

Instruments for Elaborating on the Nature of the Substance Abuse Problem

As noted in the previous section, most screening instruments contain some measure of consumption of alcohol, as well as a measure of consequences of adverse use. In this section, a number of instruments are reviewed which also cover these areas; however, their coverage is much more in-depth and they lead to the development of a much fuller picture of the extent and nature of the problem. A number of the consequence measures assess the "alcohol dependence syndrome". This construct derived originally from Edwards and Gross (1976), and included the following: "narrowing of the drinking repertoire...salience of drink-seeking behavior, increased tolerance to alcohol, repeated withdrawal symptoms, relief or avoidance of withdrawal symptoms by further drinking, subjective awareness of a compulsion to drink, and reinstatement after abstinence". Alcohol dependence is considered to be the best-quantified subset of the broader construct of 'consequences of alcohol or drug use'. Measures have been constructed to tap into other "consequences" domains, and these domains are considered important particularly from a motivational and relapse prevention standpoint. While these other domains are considered less well established, we nonetheless review some of them below.

Alcohol Use Documentation Procedures

Quantity/Frequency Method (Q/F). Q/F provides the very simplest of measures of substance use, and is applied most frequently to the assessment of alcohol use. At its most basic, a Q/F consists of two questions: 1) During the past_____ days, on how many days did you drink alcohol?; and 2) On days when you did drink, how many drinks did you usually have? Standard drink conversions are provided (e.g., 1 drink = 12 oz of beer, 5 oz of wine, 1.5 oz hard liquor), and are typically provided for all alcohol documentation procedures discussed in this section. Q/F items are frequently incorporated into brief scales or larger inventories (for example, the ASIST), and can be asked with specific reference to particular types of alcohol. These items take at most about two minutes to administer, and some literature exists on the reliability/validity (Miller et al., 1995). Skinner's "One-minute alcohol consumption history" (ARF, September, 1992) provides a standard example of such a tool, and includes examples of a single serving of alcohol. Sobell et al. (1994) criticize the Q/F method for its typical focus on "average" days, leading to a tendency to miss the clinically important binge-drinking periods; in addition, the Q/F has been criticized for its relative insensitivity to change (Addictions Research Foundation, 1998). However, the general idea of assessing quantity and frequency underlies most of the other consumption procedures, to be reviewed immediately below, and incorporation of a binge drinking indicator poses no difficulty. Also, some work exists on the reliability of the use of the Q/F within offender populations (McMurran, Hollin, & Bowen, 1990).

It should be noted that Wilkinson, Leigh, Cordingley, Martin, and Lei (1987) have produced a Q/F measure of sorts for quantifying multiple drug use. The **Psychoactive Drug Use History Questionnaire** was developed from the statistical analysis of data produced by clients assessed for a drug abuse treatment program. This questionnaire is administered interview style, and elicits information on the number of months of use in the past year; typical frequency of use during this time; typical number of times used per day; typical dosage; and additional comments about use. This procedure can be repeated for each drug class, and each drug within that class. The authors found wide discrepancies in responses across drug classes and thus note the importance of exploring each drug separately. Cluster analysis confirmed the differences among

drug classes with respect to use, numerous demographic variables, and scores on the MAST (reviewed above) and Drug Abuse Screening Test (DAST; reviewed below).

Lifetime Drinking History (LDH). Skinner (1979) has designed the LDH interview, during which the client recalls data from the time he or she began drinking up to the present time. This period may also be broken down into shorter discrete time periods. Frequency and quantity of drinking may be noted, and information on both "average" and "maximum" patterns is collected. In addition, type of alcohol consumed is noted, as is the presence or absence of morning drinking patterns (Addictions Research Foundation, 1998 of client outcome measures). Approximately 20 minutes is required for administration, with the number of items dependent upon the number of discrete periods explored; training is required for administration. The LDH is hand-scored. Test-retest reliability, and content and construct validity have been explored. Some general population norms are available. To the extent that long-term history of drinking is assumed to predict treatment outcome, likelihood of relapse, or likelihood of criminal recidivism (see Part I), information collected from the LDH would serve a purpose in correctional settings. In addition, Allen and Columbus (1995) note its usefulness with respect to treatment motivation in working through charting drinking patterns with the client. The assessment of binge drinking can easily be incorporated into this approach by inquiring as to the number of days that five or more drinks are consumed (four for women) in a single session (Wechsler, Davenport, et al., 1994).

Diary. Alternatively, a diary might be used to assess alcohol or drug use. The client self-monitors and records use exactly when it occurs, thus has the advantage of not relying on retrospective recall (Sobell et al., 1994). Miller et al. (1995) report reasonable psychometric properties associated with this strategy. However, as most of the data collection on offenders is retrospective, this method does not appear to be very useful.

Timeline Followback Procedure (TLFB) . Sobell, Maisto, Sobell, and Cooper (1979) developed the TLFB, which consists of a structured interview (although self-administration is possible, computer software is available and computer scoring is recommended by Allen and Columbus, 1995). During the interview, the client is assisted through use of memory aids and an interviewer probes to reconstruct drinking patterns over a particular period of time (e.g., one

month). Memory aids include the daily calendar; key dates; the standard drink conversion; discrete events and anchor points; black and white days (periods of abstinence and binging); boundary procedure (establishing upper and lower limits of consumption); and the exaggeration technique (presenting to the interviewee the possibility of greater amounts than he is likely to have consumed in order to encourage honest report). This approach may take 10 - 30 minutes, depending on the time period covered. Reliability, validity, and normative data have been documented for this approach (Miller et al., 1995; Sobell et al., 1994); ARF (1998) reports "very good reliability [particularly high test-retest] and validity with a variety of drinker groups including males, females, chronic alcohol abusers, and problem drinkers" (p. 11), although no data are available with respect to its use in other cultural populations (p. 11). Validity studies have established strong relationships between the TLFB and official record data on alcohol-related arrests, hospitalizations, stays in residential programs (*r*'s ranged from .42 to .93); relationships between the TLFB and physiological markers such as liver functioning; strong relationships between the TLFB and other measures of alcohol problems such as the ADS and the SMAST (*r*'s between .51 and .62); and high correlations with collateral reports (*r*'s between .52 and .95). Allen and Columbus (1995) also summarize and confirm the strong psychometric properties of the TLFB, and note its process usefulness in highlighting for the client patterns associated with his or her particular drinking problem, and in providing useful feedback for the client. Normative data are available for a number of populations (e.g., college students, community samples, clinical outpatients), but correctional populations are not among these. Because of its focus on precise recall of data over discrete chunks of time, the TLFB can be quite sensitive to change with respect to substance consumption patterns. The TLFB acknowledges the possibility of periods of incarceration, and so might be of some use in correctional settings, when detailed patterns of use are needed. A computerized version is now available (Allen & Columbus, 1995).

In summary, alcohol use documentation procedures have the major advantage of providing very direct, accurate, behavioral accounts. However, for offender populations, this could present difficulties when utilized under certain circumstances. Specifically, the likelihood of accurate recording and reporting of such behaviours is not encouraged by the contraband status of substances within correctional institutions. Nor is it likely to be particularly useful in

assessing post-release patterns as the typical conditions of parole dictate total abstinence from all substances. If an offender reports that he or she *has* consumed alcohol or taken drugs, he or she runs the risk of having parole suspended. In addition, consumption procedures have limited applicability to non-alcohol substances as "standard" measures are almost impossible to specify, due to the variability in the purity of street drugs; thus, *frequency* of consumption can be assessed, but *quantity* presents a challenge. Finally, it is not clear that "all drugs are equal" -- thus, if a user switches from daily use of heroin to daily use of marijuana with infrequent heroin use, has he or she maintained status, declined, or improved? In general, behavioral assessment of polydrug consumption is challenging. Some efforts at developing thorough and detailed assessment instruments specific to this question include the Psychoactive Drug Use History (Wilkinson et al., 1987; noted above), the **TOPS Drug Use Patterns** (French, Zarkin, Hubbard, & Rachal, 1993; Hubbard et al., 1986), the **Alcohol and Drug Use Patterns and Problems** used in the Ontario Drug Abuse Treatment Outcome Study (Ogborne, 1991).

(Short) Alcohol Dependence Data ((S)ADD)

The ADD (Raistrick, Dunbar, & Davidson, 1983) is a 39-item pencil-and-paper questionnaire (but may be administered through interview) designed to assess all dimensions of the original alcohol dependence syndrome in mildly to moderately affected populations; items were, in fact, selected on the basis of their ability to measure the Edwards and Gross (1976) dependence syndrome, lending high content validity. On the ADD, each item is rated on a 4-point scale (0 through 3) for frequency of occurrence.

Its short form, the SADD, contains 15 items and is purported to be more narrowly focused than the ADD (Allen & Columbus, 1995). The two forms correlated .92, and the SADD is now in much greater use than its parent inventory. A single total score is rendered, which may range from 0 to 45. Respondents may be classified into none (score of 0), low (1-9), medium (10-19), or high dependence (20+) groups. The temporal referent is "your most recent drinking habits". Sample SADD items include "Do you plan your day around when and where you can drink?" and "After a heavy drinking session, do you see frightening things that later you realize were imaginary?". The SADD takes about 2-5 minutes to complete, and no special training is required for the tester. Some reliability data are available (Sobell et al., 1994). No measure of

internal consistency is available, although item-total correlations range from .47 to .81, split-half reliability is reported to be .87, and test-retest reliability reports range from .81 to .92 (ARF, 1998). Factor analysis confirms conceptualization of the SADD as a single construct measure. The SADD correlates highly with the SADQ (.81-.83), the ADS (.61), alcohol consumption (.53), the SMAST (.49), and the Alcohol-Related Problems Questionnaire (.38), but not with blood tests or liver functions (the problematic interpretation of biochemical markers is discussed below). Reasonable discriminative validity has been shown, such that the SADD was able to distinguish between social and problem drinkers. It is hypothesized that the SADD should be sensitive to change, but no data are available addressing that question. The SADD has been used with male and female substance abusing adults, and with young male offenders (McMurran & Hollin, 1989; McMurran, Hollin, & Bowen, 1990), and psychometric properties have been maintained (e.g., test-retest = .87-.88; split-half reliability = .85).

Drinking Consequences Checklist Interview

The Drinking Consequences Checklist Interview (Polich, Armor, & Braiker, 1981) has as its base 19 *yes/no* items that assess withdrawal symptoms; symptoms of extreme intoxication, attempts to cut down; consequences of drinking: vocational, legal, medical, or social problems; binge drinking; and previous treatment that occurred in the prior six-month period. In addition, space is left for the interviewee to report problems *not* directly assessed in the 19 items. The authors do not recommend the development of a numerical scale from an assessment of consequences. The basic use of this scale is as a measure of the continuing presence of an "alcohol problem" following treatment. The authors use the presence of even one consequence as an indicator of "alcohol problem" -- thus, in its form as stipulated by the authors, this checklist may not be particularly useful in quantitative assessment of substance-abusing offenders.

The Manson Evaluation Revised (ME)

The ME (Manson & Huba, 1987) is a self-report 72-item instrument which assesses a number of psychological variables (anxiety, depression, mood lability, interpersonal relationships) in addition to substance use. It requires 5-10 minutes to administer and can be computer-scored; the advantage to the computer software is that it also generates a client profile and produces a "probability index" of the likelihood of "alcohol abuse proneness". Normative data for both male and female samples exist; these data are based on non-clinical community samples from Los Angeles (Inciardi, 1994). Internal consistency values of .87 are reported for the normative sample. With respect to validity, gender-specific cut-off scores produced correct alcoholic diagnoses in 79-84% of respondents (varied across gender), and 71 of the 72 items were able to distinguish alcoholics from non-alcoholics. Despite these promising properties, the ME-Revised is not found with great frequency in the addictions literature and not, to our knowledge, in the forensic literature.

Severity of Alcohol Dependence Questionnaire (SADQ)

The SADQ (Stockwell, Hodgson, Edwards, Taylor, & Ranking, 1979; Stockwell, Murphy, & Hodgson, 1983) is a pencil-and-paper 20-item questionnaire designed to assess the alcohol dependence syndrome. Its five subscales include physical withdrawal, affective withdrawal, withdrawal relief drinking, alcohol consumption, and rapidity of reinstatement. Respondents indicate on a four-point scale the frequency or severity with which they experience each of the symptoms listed, during or following periods of heavy drinking. Total scores range from 0 to 60; scores of greater than 30 are indicative of severe dependence, but the SADQ appears less sensitive than the ADS or SADD in cases of milder alcohol abuse. Short versions and computer versions are available (Sobell et al., 1994). Sample items include "During a heavy drinking period, I feel at the edge of despair when I wake" and "During a heavy drinking period, I like to have a morning drink". The scale requires five minutes for completion, and no special training is required for the tester.

The authors indicate as an advantage of the SADQ that it is relatively unaffected by the respondent's socioeconomic status, in that the items address possible symptoms characteristic of *all* drinkers. Psychometric work includes internal consistency, and content and predictive validity (Miller et al., 1995), as well as two-week test-retest reliability (.85) and concurrent validity; a correlation of .84 was found between scores on the SADQ and clinicians' ratings of dependence (Stockwell et al., 1983), and Stockwell et al. (1979) report that, when a cut-off score of 35 was used, the SADQ concurred with a clinician-rendered binary diagnosis in 82% of cases. In addition, the SADQ is related to self-rated craving and to the amount of alcohol consumed during a typical heavy drinking day (.81; Stockwell et al., 1983); and to clinical withdrawal symptoms (Miller et al., 1995). Factor analysis indicates that a single factor accounts for 53% of the variance. The original development and validation sample consisted of 104 male and female English in-patients and out-patients presenting for treatment for alcoholism. The authors began with 33 items and, through a series of factor analyses, the scale was reduced to 20 items. Each of the subscales was subjected to further factor analysis, for confirmation of single-factor solutions. The subscales are correlated fairly highly with one another, which is the result the authors expected given the theoretical cohesion of the alcohol dependence syndrome. Norms are available for individuals seeking inpatient, outpatient, and community-based treatment; the normative samples spanned a number of nations (Allen & Columbus, 1995). Allen and Columbus (1995) suggest the SADQ as useful in assessing potential candidates for controlled drinking goals, and in predicting likely severity of withdrawal symptoms once abstinence is begun. Because the SADQ uses as its referent "a heavy drinking period", it will not be sensitive to change following treatment, and is therefore useful only in an assessment context. In North America, the SADQ has largely been supplanted by the ADS, which is designed along the same lines.

Severity of Dependence Scale (SDS)

The SDS (Gossop, Darke, Griffiths, Hando, Powis, Hall, & Strang,1995) is a self-report pencil-and-paper brief scale. It was actually developed as a broader version of the Opiate Severity of Dependence Questionnaire (OSDQ; Sutherland, Edwards, Taylor, Phillips, & Gossop, 1986), which itself was based on the SADQ (reviewed above). The SDS has as its

particular focus the psychological aspect of dependence. The SDS consists of only five items; sample items include "Did you think your use of [named drug] was out of control?" and "Did the prospect of missing a fix (or dose) or not chasing make you anxious or worried?". Respondents indicate their responses on a four-point scale of severity, with "during the past year" as temporal referent. Possible scores range from 0 to 15. The development and validation sample included five samples (1312 subjects in total) who were users of heroin, cocaine, and amphetamines. Factor analysis confirmed the SDS as strongly unidimensional. Cronbach's alpha ranged from .81 to .90 across the five samples. With respect to concurrent validity, SDS scores were related to duration of use (.24-.30), frequency of use (.42 - .46), and dose (.24 - .25) across all three types of major drugs of use. These respectable psychometric properties have been confirmed in other studies (Topp & Mattick, 1997). Further receiver operating characteristic analyses have indicated that the SDS has diagnostic utility with respect to drug dependence on a par with some of the longer diagnostic schedules (Topp & Mattick, 1997).

Alcohol Dependence Scale (ADS)

The ADS is one of the most widely used measures of alcohol dependence symptoms. It was developed by Skinner and Horn (1984) from items extracted through factor analysis from the larger Alcohol Use Inventory (reviewed below); this cluster of items proved a consistent factor tapping into the Gross and Edwards (1976) alcohol dependence construct. The ADS is a self-administered pencil-and-paper questionnaire (although it has a computer-administration format, and has been incorporated into computer-administered broader batteries) which uses the past 12 months as temporal referent (although this time frame has been modified when the ADS has been included in larger assessment packages, such as the CLAI, reviewed below). The ADS takes 5-10 minutes to complete, and requires little training to administer. The ADS consists of 25 items (pared down from the original 29 -- these two versions correlate .96- .99). Sample items include "Do you drink throughout the day" and "How much did you drink the last time you drank?". Items are scored on a 2-point, 3-point, or 4-point scale (0 through 3). Total scores range from 0 to 47. One can classify individuals into the following groups based on their score: no evidence of dependence (0); low (1-13); intermediate (14-20); substantial (22-30); and severe (31-47). Ross,

Gavin, and Skinner (1990) indicate a cut-off score of between 8 and 9 to correspond with the DSM abuse/dependence diagnosis.

The ADS boasts excellent internal consistency (.85 - .92; .94 for incarcerated offenders), and good test-retest values (.92). ADS scores are correlated with degree of psychopathology and adverse consequences of drinking. With respect to discriminant validity, 88% of one sample tested were correctly classified (ARF, 1998). Factor analysis suggests a predominantly unidimensional group of items tapping into withdrawal symptoms, and two smaller factors assessing loss of control and obsessive-compulsive drinking (Addictions Research Foundation, 1998). ADS scores were found to correlate quite highly with the Michigan Alcoholism Screening Test (.69) and a number of subscales on the original Alcohol Use Inventory (Skinner & Allen, 1982), as well as with DSM symptom counts (.58 - .73). In addition, ADS scores correlate with number of psychological, medical, and legal problems, and subjective feelings of loss of control over alcohol. The relationship between ADS scores and treatment outcome has been inconsistent, but some have found it to be related to post-treatment relapse (Langenbucher, Sulesund, Chung, & Morgenstern, 1996). Some have criticized the ADS for its bias toward physiological dependence, as well as its significant correlations with a number of social desirability and denial measures; in fairness, however, few measures have been assessed with respect to this relationship, thus it is not clear that a social-desirability-free measure of substance abuse can be constructed at all. As far as we know, no formal, published data exist on the sensitivity of the ADS to change, although the items are constructed such that, given a specified time period, the ADS may pick up on behavioral and symptom changes. Data are available for male correctional populations (Hodgins & Lightfoot, 1989; Miller et al., 1995; Millson, Weekes, & Lightfoot, 1995; Sobell et al., 1994; Weekes, Moser, & Langevin, 1997).

Drug Abuse Screening Test (DAST)

The DAST, developed in 1982 by Skinner, consisted originally of 28 items, but the 20-item version is in greatest use (correlation between the two versions is .99; Skinner, 1982); also, a brief 10-item screener exists. The DAST was modelled after the MAST items, but is geared toward non-alcohol drug abuse; it was developed for use in both clinical and research settings. Thus, the DAST purports to assess symptoms of the drug dependence syndrome, but includes

some additional consequences not within that diagnosis. The content of the DAST includes questions regarding the frequency and type of use; withdrawal and dependence symptoms; physical and legal consequences; disruption to work, family, and social life; feelings of guilt; and prior treatment. Sample items include "Have you abused prescription drugs?" and "Does your spouse (or parents) ever complain about your involvement with drugs?". The DAST has as its temporal referent the past 12 months (although, like the MAST, this time-frame has been modified to suit particular settings, such as Correctional Services Canada, which uses the six-month period prior to incarceration as temporal referent). A sixth grade reading level is recommended for the DAST (Inciardi, 1994). Each positive item endorsement receives a score of one point, and a score of five points or greater indicates the need for further evaluation. Studies show that low scores are associated with alcohol-only abuse, mid-range scores characterize alcohol and drug-abusers, and higher scores tend to be indicative of abuse of drugs other than alcohol. The inventory can be administered by a clinician, completed in paper-and-pencil format, or completed on computer, and requires about 5 minutes to complete.

Specificity of 96% and a sensitivity of 79% have been reported (Kinney, 1991; Sobell et al., 1994), with an overall accuracy of 85% (Inciardi, 1994). The DAST boasts excellent internal consistency in most samples (.86- .95; Inciardi, 1994; Saltstone, Halliwell, & Hayslip, 1994; Skinner, 1982), with somewhat lower values associated with some narcotic user samples (.74). The DAST boasts good content and construct validity, and principal components analyses have produced both strong single dimensions as well as multi-dimensional breakdowns (Saltstone, Halliwell, & Hayslip, 1994), but the DAST is generally considered a unidimensional instrument by its author (Skinner, 1982). DAST scores correlate significantly with frequency of use of a wide variety of substances (.35-.55), with the number of drugs currently used (.29), with history of use (.35-.55) and with perceived problems of use (.30). DAST scores have also been found to be related to DSM substance abuse diagnoses (.74-.75) as well as number of DSM symptoms (.71). Notably, the DAST is *not* highly correlated with measures of alcohol dependence, such as the MAST (r = .41; Saltstone, Halliwell, & Hayslip, 1994) and the ADS, and is able to discriminate among alcohol-only populations, drug-only populations and alcohol-and-drug populations (Addictions Research Foundation, 1998). DAST scores are related to frequency of drug use (.19 - .55, dependent upon the drug, a number of domains of psychopathology (e.g.,

depression .31, social deviation .54, impulse expression .42, persecutory ideas .35), as well as a number of demographic and background variables (e.g., social class -.31, social stability -.27, stressful life events .28)) (Skinner, 1982). Unlike the ADS, the DAST does not appear to be highly correlated with measures of response bias (moderate correlations with social desirability [-.31 - -.38]and denial [.13 - .28]). No studies report data specifically on the DAST's sensitivity to change, but the content of the items would appear to allow for measurement of change. The factor structure and overall unidimensional nature of the DAST has been validated in a number of populations, among them female offender populations (Saltstone, Halliwell, & Hayslip, 1994). Normative data are available for male and female substance abusing populations in Canada (Inciardi, 1994), and a database is amassing for Canadian correctional populations (Lightfoot & Boland, 1993; Millson, Weekes, & Lightfoot, 1995; Weekes, Moser, & Langevin, 1997) and in some American populations (see Singer, Bussey, Song, & Lunghofer, 1995, for a report on the use of a short DAST with female inmates).

Instruments Assessing Specific Treatment Target Variables
Drinker Inventory of Consequences (DrInC)

Developed by Miller, Tonigan, and Longabaugh (1994), the DrInC can be used to document 50 different problem areas for occurrence both over the lifetime as well as in the past three months. It is a self-administered pencil-and-paper inventory, and requires about 10 minutes to complete, with 5 minutes for scoring; minimal tester training is required. Its five subscales address, physical, social responsibility, intrapersonal, interpersonal, and impulse control consequences of drinking. Notably, these subscales were not confirmed through factor analysis on the normative sample data, but were nonetheless retained as they aided clinical interpretability. The DrInC instructs the respondent to indicate for each item "Has this ever happened to you?" (yes/no) and "During the past 3 months, how often has this happened to you" (respond on a 4-point scale); thus, one can establish the existence of problems over the lifetime, and the instrument can be sensitive to change. Sample items include "My family or friends have worried or complained about my drinking" and "Drinking has helped me to have a more positive outlook on life".

Items were generated out of the authors' clinical experience, and additional items added in consultation with colleagues in the field. Recent studies indicate adequate internal consistency (total score alphas ranged from .90 - .94; subscale alphas ranged from .60 - .86) and test-retest reliability (total scores .93; subscales ranged from .79-.96). Correlations between the DrInC and a number of criterion variables revealed moderate to high correlations. Criterion variables included subscales of the AUI, the Beck Depression Inventory, some ASI subscales, and Alcohol consumption (most correlations ranging from .30 to .60). The scale appears to tap into areas not assessed with measures of consumption and alcohol dependence, suggesting that "alcohol problems" are a separate domain in need of assessment (Miller et al., 1995). Allen and Columbus (1995) recommend the use of the DrInC for both treatment planning and evaluation of treatment outcomes. At this time, no computerized scoring or interpretation is available. The DrInC was normed on both male and female inpatients and outpatients presenting with alcohol problems across a number of U.S. states, and these sub-group norms are available for testers (Miller, Tonigan, & Longabaugh, 1994). A short form -- the Short Index of Problems (SIP) -- exists; psychometric properties are not as strong for this index, particularly with respect to internal consistency. Additionally, several parallel forms are available, and a companion Inventory of Drug Use Consequences (InDUC) is available; only minimal item modifications were required to reflect drug use consequences.

Alcohol Expectancy Questionnaire (AEQ)

The AEQ, developed by Brown, Goldman, Inn, and Anderson (1980), is a pencil-and-paper (can be computer-administered but no computer scoring available) measure of the expectations of the positive consequences of drinking; Allen and Columbus (1995) state it to be the "most widely used alcohol expectancy measure in both research and clinical settings" (p. 214). It may be self- or clinician-administered in 20-30 minutes. It consists of 90 items to which the respondent indicates agreement or disagreement. Six factors have been extracted: Global positive changes; social and physical pleasure; sexual enhancement; increased social assertion; tension reduction/relaxation; increased arousal and aggression. Items were derived from the compilation of 120 verbatim statements of men and women with a broad range of drinking histories (non-drinkers through to long-term chronic alcoholics). Sample items include "Drinking

gives me more confidence in myself" and "Alcohol helps me sleep better". The instrument does well at predicting both current and future drinking practices, thus is predictive of retention in treatment and post-treatment relapse. In this sense, the AEQ may be useful as a predictive measure just prior to parole release. In addition, it is highly correlated with other measures of alcohol problems, such as the MAST. Its psychometric properties are generally well-established internationally (Allen & Columbus, 1995). Modifications of this instrument include Rohsenow's (1983) 40-item *true/false* **Alcohol Effects Questionnaire**, which assess both positive and negative consequences of drinking, and the **Alcohol Beliefs Questionnaire** of Collins, Lapp, Emmons, and Isaac (1990) which contains 40 statements about alcohol use of which the respondent must indicate endorsement or non-endorsement (Miller et al., 1995; Sobell et al., 1994).

Negative Alcohol Expectancy Questionnaire (NAEQ)

The NAEQ (McMahon & Jones, 1993) is a 60-item self-report questionnaire (can be administered as pencil-and-paper, by interview, or by computer) intended to measure the client's expectation of negative consequences if he or she were to "go for a drink now". Consequences include same-day, (proximal) and next-day and long-term (distal) consequences of continued drinking. Sample consequences include "I would get into a fight", "I would have a hangover" and "I would get into debt". Clients respond on a 5-point scale, indicating the likelihood that they would expect to encounter each consequence. Time required for administration runs 15-20 minutes, and no training is required for the tester. A 22-item version is available. Psychometric work has included test-retest reliability, split-half reliability, and internal consistency analyses, as well as predictive, concurrent, and construct validity. Norms are available, and the normative sample is representative of a broad continuum of drinkers (from abstainers to social drinkers to posttreatment relapsers to posttreatment abstainers) (Allen & Columbus, 1995).

One advantage to the NAEQ is its generation of both a quantitative summary assessment, and qualitative information which can serve to individualize treatment; the items have potential for sensitivity to change as treatment targets. One disadvantage to the NAEQ is its focus solely on negative expectancies; the need for targeting positive expectancies in the treatment of substance abuse is well-documented.

Drinking Expectancy Questionnaire (DEQ)

The DEQ (Young & Knight, 1989) is a 80-item pencil-and-paper measure of alcohol expectancies; its nine subscales tap into expectancies of assertion, affective change, sexual enhancement, social enhancement, relaxation, cognitive impairment, dependence, carelessness, and aggression. Sample items include "Drinking makes the future brighter" and "Drinking makes me feel like a failure". The DEQ requires about 30 minutes to complete, and 15 minutes to score; it can be both self-administered and self-scored, thus no training is required for use.

The DEQ items were generated from interviews with alcohol consumers, literature review of alcohol expectancy experimental work, and existing related measures. These items were piloted on relatively large college and community samples in New Zealand, and items were refined through factor analyses, and the subscales developed. Original psychometric development also included internal consistency analyses (alphas ranged from .73 to .94 for all subscales save the aggression subscale). Allen and Columbus (1995) report on validity work (content, predictive, concurrent, and construct) carried out since that time. The DEQ is recommended as an aid in treatment planning as well as a measure of treatment progress (Allen & Columbus, 1995). If alcohol expectancies are a treatment target, the DEQ would seem quite amenable to detecting change. In addition, as can be seen from the sample items noted above, the DEQ covers both positive and negative expectancies; other instruments reviewed in this section have been criticized for their exclusive focus on one or the other.

The DEQ is actually Part I of the two-part *Drinking Expectancy Profile*. Part II consists of the *Drinking Refusal Self-Efficacy Questionnaire (DRSEQ)*, a 31-item scale for assessing drinking-related self-efficacy. Respondents indicate on a 6-point scale their certainty that they could resist drinking in 31 situations. Its three subscales address social pressure, opportunistic

drinking, and emotional relief. Sample DRSEQ situations include "When your friends are drinking" and "When you feel frustrated". Like its companion DEQ, the DRSEQ is self-administered and can be self-scored; normative samples and psychometric work are identical to that relating to the DEQ.

Measures of Drinking Restraint Scale

The need for measuring tendencies toward drinking restraint is based on the belief that efforts at restraining drinking represent conflict over impulse control, and that this conflict can be an early sign of high risk for alcohol problems (Allen & Columbus, 1995). This theory arose in part out of work in the area of dietary restraint, and the tendency of dietary restraint to put individuals at risk for overeating or binge eating. Thus, measures of drinking restraint may serve to identify individuals at risk who would be otherwise missed by instruments assessing actual drinking consumption, related behaviours, and consequences experienced thus far. In this sense, measures of restraint may serve as screeners of a sort, but may also be useful in targeting particular variables in treatment.

We have elected to note four scales of drinking restraint. The **Restrained Drinking Scale** (RDS; Ruderman & McKirnan, 1984) is a 23-item pencil-and-paper questionnaire designed to assess preoccupation with control over drinking; it is based on the cognitive restraint construct of Marlatt and Gordon's abstinence violation model. It requires about 10 minutes administration time, and no special training is required for the administrator. Respondents indicate on a 9-point scale the degree to which each statement is true for them. Sample items include "How much effort does it take for you to keep your drinking under control?" and "Do you keep track of what you have had to drink as a conscious means of limiting your intake?". The authors report an alpha value of .81 for their original college sample, and they demonstrate the validity of the scale through its correlation with reported number of drinks in the past year (.36), in the past week (.44), and average number over the past three months (.45). Norms are available, but these norms are based only on college undergraduate males. The authors state very clearly that the RDS is *not*

a diagnostic instrument, rather, it is to be considered a tool for testing theory, and potentially for use in treatment process.

The **Drinking Restraint Scale** (Curry, Southwick, & Steele, 1987) is a 7-item pencil-and-paper measure (e.g., "Do you have feelings of guilt after drinking too much?" and "Do you feel that you give too much time and thought to drinking?") of restraint, requiring 5-10 minutes for administration. Factor analysis has confirmed its unidimensional nature, and psychometric work includes internal consistency and validity (content, predictive, concurrent, and construct). Gender-specific norms are available (Allen & Columbus, 1995).

The **Temptation and Restraint Inventory** (TRI; Collins & Lapp, 1992) is a 15-item pencil-and-paper measure derived from combining the RDS (reviewed above) with a number of new items intended to broaden the cognitive component of restraint. The TRI generates 5 subscales: Govern, Restrict, Emotion, Concern about Drinking, and Cognitive Preoccupation. The former three were derived from factor analytic work (on the RDS), while the latter two were developed conceptually for clinical and research purposes. Sample items include "Does seeing other people drink remind you of your efforts to control your alcohol consumption?" and "Do thoughts about drinking intrude into your daily activities?". About 10 minutes is required for administration, and no special training is necessary for the tester. Development of the scale used largely factor analytic criteria, and confirmed criterion validity (through moderate correlations with the SMAST and "typical" drinking). More recent psychometric work includes internal consistency and validity (predictive, concurrent, and construct), and general norms are available.

The **Impaired Control Scale** (ICS; Heather, Tebbutt, Mattick, & Zamir, 1993) is a 25-item pencil-and-paper inventory which assesses three domains: the degree to which an individual has attempted to exert control over drinking in the past month; the degree of success in controlling drinking over the past 6 months; and belief in ability to control drinking. Sample items include "During the last six months, I tried to limit the amount I drank" and "During the last six months, I started drinking even after deciding not to". Temporal referent is the past six months. This scale requires 5-10 minutes for administration, and some training is required for the tester (Allen & Columbus, 1995).

Items were originally drawn from a variety of existing instruments which contained some items tapping into the "control" aspect of drinking. The scale underwent a number of pilot stages, including extensive item analysis and emphasis on the scale's discriminative ability, as both clinical and non-clinical samples were included in the original development and validation study. The scale was able to successfully discriminate the two samples. Psychometric work includes internal consistency (ranged from .84 - .95 across the three subscales and the original composite sample); test-retest reliability (.63 - .96 across subscales and samples), and validity. The ICS was moderately correlated with the SADQ, the SADD, and the MAST (.09 - .54), but also loaded independently from the SADD in a factor analysis, providing support for the distinctness of the construct measured by the ICS.

Alcohol Abstinence Self-Efficacy Scale (AASE)

The AASE (DiClemente, Carbonari, Montgomery, & Hughes, 1994) is a 40-item pencil-and-paper scale for assessing the respondent's confidence in his or her ability to abstain from drinking in 20 common high-risk-relapse situations. The scale is modeled on Bandura's (1977) self-efficacy construct and its application to Marlatt and Gordon's (1985) relapse prevention model for addictions. For each situation, an efficacy and a temptation (i.e., cue strength) item have been generated. Each item is rated on a 5-point scale, with anchors *not at all* to *extremely*. The following four subscales can be computed: Negative affect cues (sample item "When I am feeling depressed"); social/positive cues (e.g., "When I see others drinking at a bar or at a party"); physical and other concerns (e.g., "When I have a headache"); and withdrawal/urges (e.g., "When I want to test my willpower over drinking"). Administration requires about 10 minutes, and the inventory can be quickly hand-scored by general staff (no computer version currently available). Some evidence for the internal consistency and construct validity of the AASE exist, and the AASE has been used in such large-scale programmes as Project MATCH (Project MATCH Research Group, 1997). The AASE was normed on outpatient substance abusers. The AASE is recommended for use in individualizing treatment plans, and in assessing possibilities for relapse and relapse-prevention (Allen & Columbus, 1995).

The authors of the AASE compare their scale most closely to the SCQ, noting that the briefest version of the SCQ contains 40 items. Thus, they proposed to derive a 20-item modified version of the AASE. The "best" items were derived from extensive psychometric work on the AASE, which included factor analysis, structural equation modelling which confirmed a 4-factor model and a single second-order factor model fit, and a moderate correlation (-.65) between the temptation and efficacy scores. Internal consistency values for the AASE ranged from .82 to .92 for the self-efficacy subscales, and from .60 to .99 for the temptation subscales. Construct validity was confirmed by significant (albeit small) relationships between the AASE subscales and subscales of the Alcohol Use Inventory, and between the AASE and the Action subscale of the University of Rhode Island Change Assessment (URICA); independence from other of these scales was used to support the divergent validity of the AASE. Structural equation modelling supports a like structure of the AASE in both men and women.

Inventory of Drinking Situations (IDS)

Developed by Annis, Graham, and Davis (1987), this pencil-and-paper questionnaire (also available in computer-administered form) assesses reasons for drinking and potential reasons for behaviour change (Miller et al., 1995). The IDS consists of 100 items, and respondents rate each item on a 4-point scale (ranging from *never* to *almost always*) for the frequency with which they drank in the given situation over the past year. Sample situations include "When I wanted to celebrate with a friend" and "When I would have trouble sleeping". Eight situation domains are captured, thus a measure of drinking in response to each of the following domains is derived: unpleasant emotions, pleasant emotions, physical discomfort, testing personal control, urges and temptations, conflict with others, social pressure to drink, and pleasant times with others. Each domain is scored, and a client profile is generated; the intent is for the profile to be of use in the planning of specific treatment goals to target problem areas, and in the assessment of progress in each of these areas. Interestingly, the IDS seems able to sub-type two distinct types of drinkers: those who are likely to drink alone (more frequently women), and those more likely to drink in social situations (more frequently men); this distinction has been shown to be relevant in treatment matching, that is, the drink-alone sub-type benefits from

different treatments than does the drink-socially sub-type (Addictions Research Foundation, 1998). The IDS takes 15-20 minutes to complete.

Internal consistency is high for each of the eight domain subscales (.87-.96), and item-total correlations are satisfactory (.39-.82), although factor analysis has suggested a three-factor solution (Negative Feelings, Positive Feelings, and Testing Personal Control). With respect to validity, IDS subscale scores have been shown to be related to total and typical consumption, frequency of drinking, drinking alone, duration of drinking problem, and social instability.

The IDS has as a strength its grounding in a well-established theoretical framework: the relapse-prevention paradigm of Marlatt and Gordon (1985). The scale was developed through review of a variety of existing scales, and consultation with professionals and clients in the field. A shorter 42-item version exists, but is recommended only for research purposes rather than clinical use (Addictions Research Foundation, 1998). A 50-item Inventory of Drug Taking Situations (IDTS) provides a companion inventory (Annis & Graham, 1991). Computer versions are available. General normative data are available. The IDS has been incorporated into the OSAPP (Lightfoot, 1993) and CHOICES (Lightfoot & Boland, 1993) programmes provided by Correctional Services Canada, thus some data exist with respect to offender populations.

Inventory of Drug-Taking Situations (IDTS)

The IDTS (Annis & Graham, 1991) is a 50-item self-report questionnaire (available also in computerized form), and serves as a companion to the IDS. Like the IDS, it is based on Marlatt and Gordon's relapse-prevention model, and assesses the same eight domains as the IDS, reviewed above. However, the authors state that the items can be classified into two broader categories: Personal States and Situations Involving Other People. Sample items include "I used _____ [insert drug] when I was in a place where I had used or bought these drugs before" and "I used _____ [insert drug] when I felt that I had let myself down". Factor analysis has confirmed the eight subscales, and a second-order analysis resolved in the three factors found in the IDS data. Administration time ranges widely (typically 15-45 minutes), as it is dependent upon the number of substances under assessment.

Internal consistency values for each subscale range from .59 - .92, and most were over .80 for a sample of incarcerated offenders (Addictions Research Foundation, 1998). Validity varied across different substances but, in general, subscales were correlated with total use (.19-.68), frequency of use (.20-.44), typical use (.20-.38), DAST scores (.20-.51), and ADS scores (for alcohol use; .42-.68) (Addictions Research Foundation, 1998). Empirical data on the sensitivity of the IDTS to change has not be reported, but the content of the items would seem to be appropriate for change measurement. Official normative data is available for only a limited sample but, as noted above, some work has been done in prison populations, including samples of incarcerated adolescents (McKay, Murphy, McGuire, Rivinus, & Maisto, 1992); for the latter samples, the psychometric properties held up (alphas ranged from .83 to .95, with a single .68; the IDTS was moderately correlated with drug use frequency; and the IDTS discriminated amongst different drug groups). Again, the IDTS has been incorporated into the CHOICES and OSAPP programmes provided by Correctional Services of Canada.

Situational Confidence Questionnaire (SCQ)

The SCQ (Annis & Graham, 1988) is a 39-item pencil-and-paper questionnaire which assesses situational self-efficacy; these items were drawn from the 100 items of the IDS (reviewed above), and therefore share its theoretical grounding in the relapse prevention model of Marlatt and Gordon. The 50-item Drug Taking Confidence Questionnaire (DTCQ) provides a companion scale to the SCQ. Both take between about 10 minutes to complete. Both of these scales, as well as the IDS and IDTS (described above) consist of eight subscales: Unpleasant emotions, physical discomfort, pleasant emotions, testing personal control, urges and temptations to drink, social problems at work, social tension, and positive social situations. These subscales can be grouped into three general classes: Negative affect, positive affect, and urges and testing. The respondent indicates the percent he or she feels confident of being able to resist the urge to drink heavily in a given situation; the respondent selects from the discrete percentage values of 0%, 20%, 40%, 60%, 80%, or 100%, thus items are scored on a six-point scale. Sample situations include "If other people treated me unfairly" and "If I met a friend and he/she suggested that we have a drink together". Average scores are computed for each subscale as well

as for the overall SCQ. Client profiles may be generated, and can be useful in planning particular treatment targets.

Internal consistency values range from .81 to .97 for each subscale, and .98 is reported for the entire SCQ. Factor analytic work has confirmed the eight subscales. SCQ scores have been related to consumption (typical and total), to the Hopelessness Scale (-.37), and to the Beck Depression Inventory (-.52). The SCQ is able to discriminate abstinent alcoholics from those just entering treatment, and has had some predictive validity of success in treatment, such that lower SCQ pre-treatment subscale scores predicted situations of relapse post-treatment. The SCQ seems sensitive to change post-treatment and at follow-up. The SCQ was not correlated with social desirability (ARF, 1998).

The DTCQ has similarly good psychometric properties; subscale and total alphas range from .79 to .98. DTCQ scores were found to be correlated with the ADS, the DAST, the SOCRATES, the Beck Depression Scale, the Hopelessness Scale, and the Symptom Checklist 90, indicating good criterion and construct validity. Factor analysis indicates a good fit with a three-factor solution: positive situations; negative situations; and temptation situations.

Normative data exist for male and female populations, and the SCQ is used in a number of languages (Spanish, Swahili, Russian and Norwegian) (Addictions Research Foundation, 1998). Computer versions are available (Sobell et al., 1994).

Coping Behaviours Inventory (CBI)

The CBI (Litman, Stapleton, Oppenheim, & Peleg, 1983) is a 5-minute self-report pencil-and-paper measure of the client's use of coping strategies in response to the urge to drink. The respondent indicates on a four-point scale (from *Usually* to *Never*) the frequency with which he or she employs each of the 36 coping strategies listed (14 are cognitive and 22 behavioral); a lower score indicates more frequent use of the strategy. Items can be summed, or an average computed. Sample strategy items include "Recognizing that life is no bed of roses but drink is not the answer" and "Making up my mind that I'm going to stop playing games with myself".

Items were originally derived from extensive interviews with alcoholic patients about strategies they had used to avoid relapse; this original set underwent extensive psychometric refinement until the 36 items retained met particular psychometric criteria. The CBI can discriminate between relapsers and successful abstainers; abstainers typically use a greater number of coping strategies, and employ them with greater frequency. Factor analyses support four factors: Positive thinking, negative thinking, avoidance/distraction, and seeking social support. Higher scores on the CBI have been related to higher self-efficacy, lower temptation to drink, greater social stability and life satisfaction, and fewer physical and social complications. The CBI appears sensitive to change over treatment periods. Normative data are available largely for male samples.

Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)

The most recent incarnation of the SOCRATES (Miller & Tonigan, 1996) consists of 19 items. Originally, the 40-item scale boasted five subscales based on Prochaska and DiClemente's Stages of Change model of addictive behaviours. The authors report on extensive pilot testing and refinement of the SOCRATES using a very large sample ($N > 1700$) from the Project MATCH database. The final product produces three subscales: Taking steps; recognition; and ambivalence. The instrument is intended to assess which stage the respondent is at. Sample items include "I have already changed my drinking, and I am looking for ways to keep from slipping back into my old pattern" and "Sometimes I wonder if I am in control of my drinking". Psychometric properties of the SOCRATES are excellent. Cronbach's alpha for the three scales ranged from .88 to .96, while test-retest reliabilities ranged from .83 to .99. The final three-factor solution seems stable. In our opinion, this instrument has great potential for use in treatment planning and the treatment process itself.

Some alternative readiness to change inventories are available, also based on the Prochaska and DiClemente model. The Readiness to Change Questionnaire (RTCQ; Heather, Gold, & Rollnick, 1991) is a 12-item pencil-and-paper test requiring only 2-3 minutes for completion. No administration training is required; individuals are assigned to Precontemplation, Contemplation, or Action stage of change. Sample items include "I don't think I drink too much", "I enjoy my drinking, but sometimes I drink too much", and "I am actually changing my drinking

habits right now". Psychometric work includes interrater reliability, internal consistency, and validity (content, predictive, concurrent, and construct). Norms are available and the normative sample consisted of problem drinkers in a general hospital population (Allen & Columbus, 1995).

The **Recovery Attitude and Treatment Evaluator Clinical Evaluator and Questionnaire** (RAATE; Mee-Lee, Hoffman, & Smith, 1992) is in fact two separate instruments: the CE is a 35-item structured clinical interview, while the QI is a 94-item true/false self-report questionnaire. The RAATE was developed as an aid in placing clients at the level of care appropriate to their particular readiness stage. Both portions consist of five scales: resistance to treatment; resistance to continuing care; severity of biomedical problems; severity of psychiatric/psychological problems; and social/environmental support. QI sample items include "I don't have an illness that requires frequent medical supervision" and "I have severe emotional problems that are related to my alcohol/drug use". The CE takes 20-30 minutes to administer, while the QI takes 30-to 45 minutes. Internal consistency for the QI ranges from .63 to .78, while test-retest (24-hour) ranges from .75 to .87 across scales. The CE's average interrater reliability ranged from .59 to .77, and Allen and Columbus (1995) report good convergent and divergent validity for both portions of the RAATE. Training is recommended for those administering the RAATE. Sensitivity with change would appear relevant to the treatment process, rather than post-treatment change and maintenance of change at follow-up (Allen & Columbus, 1995).

Change readiness inventories in general seem most appropriate at pre-treatment assessment, for assignment to interventions which meet the client at his or her stage of change. Other questionnaires measuring an individual's stage of change that are not reviewed here include the **University of Rhode Island Change Assessment** (URICA; McConnaughy, Prochaska, & DiClemente, 1983), and the **Alcohol and Drug Consequences Questionnaire** (ADCQ; Cunningham, Sobell, Gavin, Sobell, & Breslin, 1997). The latter is a very newly developed scale which shows very promising psychometric properties, particularly with respect to its ability to predict treatment success.

Broad, Comprehensive Assessment Batteries
Addiction Severity Index (ASI)

The ASI, developed by McLellan, Luborsky, Woody, and O'Brien (1980), is possibly the most widely used standardized instrument in the field of substance abuse; it can be used to assess both alcohol and drug use. The ASI is based on the premise that an adequate evaluation of addictive behaviours must incorporate the context of the problem, with respect to both causal and consequent variables (Inciardi, 1994; McLellan et al., 1980). The current and fifth edition (McLellan, Kushner, Metzger, Peters, Smith, Grissom, Pettinati, & Argeriou, 1992) is available in nine languages. It is administered in the form of a structured interview lasting 40 - 60 minutes. It is recommended for both research and clinical purposes, with an emphasis on the development of treatment plans in the latter case. Multiple administrative assistance tools are available for the ASI (e.g., manuals, training videos, scoring guidelines), and a trained and experienced clinician or technician is required for competent administration. A general overall scale score is derived, as are six life problem area scores: Medical; employment/financial support; drug/alcohol use; legal/criminal justice involvement; family/social; psychological/psychiatric. In addition to the life problem area portion, a portion investigating personal and family background is included. Temporal referents are both recent and lifetime substance use. Each of the 161 items is rated on a 5-point scale; the respondent indicates to what extent the item in question is of concern, and to what extent he or she feels treatment is required. In addition to the client's self-report data, the interviewer rates her subjective assessment of the client's problem severity, the client's honesty about the problem, and client's understanding (on 10-point scales). A variety of composite, computer-generated scores can be produced to form client profiles; scoring of these composites by hand is not feasible.

The ASI boasts good test-retest reliability (average values between .83 and .89), good interrater reliability (cross-clinician severity ratings "virtually identical", with a reported average concordance of .89), and good concurrent validity in general, although these properties have been found to be less adequate in the severely mentally ill (Carey, Cocco, & Correia, 1997). The original factor analysis supported a six-factor solution, but this has not been consistently replicated (e.g., Rogalski, 1987). Various subscales of the ASI correlate with the Beck Depression Inventory (.27), the Symptom-Checklist-90 (.39-.47), and the Quantitative Inventory

of Alcohol Disorders (.76). In addition, each subscale was validated in the original sample by correlating it with three separate concurrent measures. For example, the "alcohol" subscale was related to number of overdoses, blackouts and seizures (.72); the medical scale was related to number of current medical symptoms (.69); and the legal scale was related to total number of convictions (.71). A computer version has recently become available (Miller et al., 1995; Sobell et al., 1994). An extensive manual and training videotapes accompany the protocol, thus a trained clinician or technician must administer the index.

Although a computer version seems feasible, the authors of the fifth edition are adamant that the protocol is *not* to be administered via computer, due to the importance of the subjective clinician ratings in establishing reliability and validity of the instrument (McLellan et al., 1992). This clearly presents a drawback for institutions in which a 60-minute interview, plus scoring time, carried out by (at minimum) a trained clinician, is not practical. The ASI has been criticized for its lack of attention to problems specific to female populations. One major strength, however, is its incorporation of information on client distress, client desire and motivation for treatment, and the potential for client denial of the problem. In addition, McLellan, Luborsky, and O'Brien (1986) report that the ASI was sensitive to change at six-month post-treatment follow-up of drug and alcohol treatment patients.

Normative data are available for a wide variety of samples, including samples of diverse racial backgrounds incarcerated samples , and there is some history of use with incarcerated populations (Allen & Columbus, 1995; Breteler et al., 1996); all normative data derive from clinical samples.

Both the original paper (McLellan et al., 1980) and the paper detailing the development of the fifth edition of the ASI (McLellan et al., 1992) indicate the careful consideration of practical and theoretical issues, and strong psychometric work, that has gone into the development of the index and subsequent versions. Its widespread use in both assessment and treatment outcome studies has led to the establishment of a strong data base of information in which one can place much confidence. From our examination of the actual interview schedule, we can recommend the use of this instrument in all aspects save that of practicality, given the onerous task of administration. One criticism raised against the ASI is its failure to recommend

particular treatment interventions (National Institute of Corrections, 1991) -- a criticism relevant to a number of batteries reviewed here.

Drug Abuse Treatment for AIDS Risk Reduction (DATAR)

The DATAR (Simpson, 1990) was originally developed to evaluate efforts at improving program retention rates and reducing relapse in intravenous drug users. However, it is also recommended as a pre-treatment assessment protocol, as well as a marker of treatment progress, and shares many features with the ASI, reviewed above. There are two parts to the DATAR. The Intake Form is a structured interview (thus requiring at minimum a trained and qualified technician) that covers sociodemographic, family, peer relation, health, psychological, criminal, and drug history variables; the interviewer rates, on a 10-point scale, the severity of problems in each of these six domains, severity of use of 15 potential substances, and also rates HIV-risk. Ratings of 4 or 5 are considered indicative of need for treatment attention. The interview takes 60-90 minutes to complete. The Self-Rating Form has the client rate each item on a 5-point scale; items address self-esteem, depression, anxiety, antisocial personality, risk-taking, decision-making, drug use, desire for help, and readiness/motivation for treatment. The author indicates requirement of an eighth grade reading level, which may contraindicate the instrument for some populations; this portion typically takes 10-15 minutes to complete.

Internal consistency values for the Self-Rating portion range from .62 to .91, while test-retest reliability ranged from .54 to .88. The reliability of composite scores ranged from .63 to .88. The appropriate subscales correlate with the *Beck Depression Inventory* and portions of the *Symptom Checklist-90* (.61-.81), as well as subscales on the *Millon Clinical Multiaxial Inventory* (.50 - .60). Published norms were not available at the time of the last review of this inventory, although some sample means might be obtained. One very advantageous feature of the DATAR is that "an efficient and well-documented data management system has been developed that is being shared with other treatment research projects" -- such a system would be most useful in attempting to incorporate the battery into a large system such as Correctional Services.

Alcohol Use Inventory (AUI)

The Alcohol Use Inventory (Horn, Wanberg, & Foster, 1974; 1987) may serve as a comprehensive measure of several domains critical to assessment of an alcohol problem. Its development is based on a theory of drinking that conceptualizes each alcoholic as a "distinct Gestalt", with unique patterns of perceived benefits from drinking, styles of drinking, perceived consequences of drinking, and thoughts on how to deal with the drinking problem (Allen & Columbus, 1995). It is a pencil-and-paper test (but can be computer-administered), requires under one hour to complete, and can be scored quite quickly and easily by non-clinical but trained staff or by computer; computer packages also offer interpretations. It consists of 228 items with 24 subscales developed through factor analyses on large sets of clinically-derived data. Item responses consist of *yes/no* for some items, and 3-5 multiple choice options for others. Seventeen of the scales are considered primary factors, among them motivations for drinking, drinking style, physical dependence, loss of control, marital difficulties, readiness for change. Six second-order factors have been extracted to produce more general scales, and a single overall severity score is also generated. Some sample questions include "Do you drink to change your mood (drink when bored, angry, flat)?" and "Usually how much time is there between your periods of drinking--time when you don't drink at all?"

This instrument appears to be of particular use in assessing suitability for particular treatment programmes (Miller et al., 1995), as the instrument generates considerable information about the uniqueness of each individual's alcohol problem. Some general norms are available, but norms for specific sub-groups are not. Psychometric work on test-retest reliability, internal consistency, and validity (content, predictive, concurrent, and construct) has been carried out.

A Structured Addictions Assessment Interview for Selecting Treatment (ASIST)

The ASIST was developed by the Addiction Research Foundation in 1984 and is intended to collect information directly relevant to treatment assignment. This structured interview schedule assesses patterns of alcohol and drug use and abuse; associated physical, psychological, family, and employment problems; previous treatment history; and treatment preferences of the client (Miller et al., 1995). It should be noted that the ASIST incorporates the ADS and the

DAST, reviewed above. At one time the ASIST was widely used by Alcohol and Drug Referral Centres across Ontario. However, because of time (it is fairly long to administer) and other constraints its use has declined and Referral agency workers have switched to shorter versions that differ from area to area or switched to different formats, such as motivational interviewing (J. Pierce, Personal Communication, Kingston Alcohol and Drug Referral Centre).

The ASIST has served as the base for development of the ASIST-I: A Structured Addictions Assessment Interview for Selecting Treatment for Inmates. That is, this schedule was developed specifically for Canadian offender populations (Hodgins and Lightfoot, 1988; Lightfoot and Hodgins, 1989). In most ways the ASIST-I parallels the CLAI, except that it is administered as a structured interview with time allowed for the offender to complete self-report questionnaires (e.g. ADS, DAST, General Health Questionnaire). Because it is so similar to the CLAI, which is used far more widely with offenders, this review will concentrate on the latter in order to avoid redundancy. However, one advantage of the structured interview approach of the ASIST-I was that the interviewer could do some cross checking of self report information (e.g. ADS and DAST) with file information (e.g. impaired driving charges, assaultive when drinking, etc.). Another potential advantage is that it included some neuropsychological screening instruments (Trails and Digit Symbol subtest). As noted earlier, the ASIST-I yielded considerably higher prevalence of substance abuse problems compared to the CLAI, however, this was likely due to self-selection bias in the volunteer offenders who completed the ASIST-I.

Comprehensive Drinker Profile (CDP)

Developed by Miller and Marlatt (1984), the CDP is a two-hour, 88-item structured interview; an additional 30 minutes is required for scoring (computer scoring is available for only a portion of the schedule). The schedule explores demographics, substance consumption, life problems, drinking settings, beverage preferences, medical history, use of other drugs, motivations for use, motivations for change, and self-efficacy. A sample question is "What are the main reasons why you drink? In other words, when you are actually drinking, what for you is the most positive or desirable effect of alcohol? What do you like best about alcohol?" (motivational domain). The CDP is recommended for use in treatment planning (Allen &

Columbus, 1995). A shortened version and parallel forms are available, and schedules for the interviewing of significant others (observer ratings) are available (Miller et al., 1995).

Psychometric work on the CDP includes tests of inter-rater reliability, and validity (content, predictive, and concurrent). Gender specific norms are available

One advantage to this assessment tool is that it is part of a family of interview protocols which include treatment follow-up interview schedules (the *Followup Drinker Profile*), thus consistency may be maintained across the various stages of assessment.

Computerized Lifestyle Assessment Instrument (CLAI)

The CLAI is a computer administered inventory with over 600 items that makes it one of the most comprehensive instruments currently available for assessing substance abuse in offenders (Robinson, Fabiano, Porporino, Millson, & Graves, 1992; Robinson, Porporino & Millson, 1991). The CLAI evolved from the Computerized Lifestyle Assessment (CLA) which was developed by Harvey Skinner of the Addiction Research Foundation for assessing non-offender populations (Skinner, Allen, McIntosh & Palmer, 1985). The CLA will not be reviewed here in order to avoid redundancy, but in general, it is a very good instrument for assessing substance abuse.

The CLAI examines a variety of factors associated with substance abuse, including physical health; mental health; nutrition; functioning in family and social relationships; education/work; criminal behaviour patterns; substance abuse as assessed by the ADS, DAST, and other indicators, including its relationship to criminal activity; past substance abuse treatment; and readiness for future treatment. The CLAI is programmed to catch inconsistencies in offender reporting. Unlike the CLA, which uses the previous year as the target period for assessment, the CLAI utilizes the 6-month period prior to the offender's most recent conviction. The CLAI is utilized in federal prisons across Canada, can be administered in both English and French (Weekes, Vanderburg, & Millson, 1995), has been tested on an aboriginal sample of offenders (Vanderburg et al., 1994), and key components (ADS, DAST) have been tested on female offenders (Hodgins & Lightfoot, 1988). Several thousand offenders have now been assessed, offering a tremendous data base for research and clinical purposes (Weekes, Moore, &

Langevin, 1997). An interesting feature of the CLAI is that it provides a profile with graphic feedback to the offender. Considering the importance of feedback for treatment motivation, this is a valuable feature. A more thorough profile is provided to the offender's case management officer, which should serve as an excellent source of information in evaluating the offender's stress and in planning for the offender's treatment needs.

A key feature of the CLAI is the use of the ADS and DAST to measure severity of substance abuse problems. As noted earlier in this review, the ADS and DAST have excellent psychometric properties in terms of reliability and validity with non-offender populations. Tests of offender populations also show that internal consistency remains high (DAST = .90; ADS= .94; Robinson, Porporino, & Millson, 1991). This high reliability has been replicated in both French and English administrations (Weekes et al., 1995).

Weekes et al. (1995) also examined the factor structure of the CLAI in English and French populations of offenders. Although little detail is given about the particular factors that emerged, the authors report that the factor structure of the main factors are virtually indistinguishable in the anglophone and francophone CLAI samples.

Validity studies have demonstrated good agreement between CLAI determination of substance abuse problems and determination based on offender files (Robinson & Millson, 1991) and by interview, which included a second administration of the ADS and DAST (Beal, Weekes, Millson, & Eno, 1997). In addition to these validity checks, Weekes et al. (1997) were able to demonstrate that the relationship between substance abuse crimes increases strongly as the severity of substance abuse (judged by ADS and DAST) increases. A similar expected relationship was shown between severity of substance abuse as measured by these scales and the probability of being intoxicated at the time crimes were committed. These two findings add to the validity of the CLAI assessment of substance abuse.

Like its non-offender cousin, the CLA, the CLAI gives every indication of being a superior instrument for the assessment of substance abuse in offenders. In addition, it is well accepted and understood by offenders, and relatively cheap to administer compared to structured interview approaches. Finally, since all federal offenders now complete the CLAI on admission,

it serves a multi-function purpose of screening, assessment and feedback, and treatment planning.

Drug Use Screening Inventory (DUSI)

The 159-item DUSI was developed by Tarter and Hegedus (1991) and assesses the severity of problems across the following ten domains: substance abuse; psychiatric disorder; behaviour problems; school adjustment; health status; work adjustment; peer relations; social competency; family adjustment; and leisure/recreation. Items are constructed to tap behaviours, attitudes, and affect. Consumption is also assessed, and preferred and problem drugs identified; a lie scale is also incorporated into the DUSI, thus making an effort to address the concern with social desirability and response bias raised by many in the assessment literature in general. "The past year" serves as the temporal referent for each item, except for the consumption grid which uses "each month" as the referent. Thus, the scale has potential for sensitivity to long-term changes. The scale can be administered as a pencil-and-paper test, by interview, or by computer, and requires 20 minutes to complete; a 5th grade reading level is required (Allen & Columbus, 1995). An absolute severity profile is generated, as well as a profile ranking the 10 domains in order of severity for the particular individual; and a single global index is also computed. Allen and Columbus (1995) suggest that the DUSI can be useful in identification, broad domain diagnosis, and treatment monitoring.

Psychometric work includes interrater reliability, split-half reliability, internal consistency, and content and construct validity. Some norms on limited populations are available.

Chemical Dependency Assessment Profile (CDAP)

The CDAP (Harrell, Honaker, & Davis, 1991) is a 235-item self-report instrument (also available in computer format) which assesses both alcohol and other substance problems. The test taps the following eleven domains: quantity/frequency of use; physiological symptoms; situational stressors; antisocial behaviours; interpersonal problems; affective dysfunction;

attitudes toward treatment; degree of life impact; tension-reducing expectations; social facilitation expectations; and mood-enhancing expectations. Internal consistency values for the domains range from .60 to .88, while six-day and nine-day test-retest values range form .77 to .96. CDAP subscale correlations with the MAST and the AUI ranged from .33 to .79 (higher correlations found for the Q/F and Life Impact dimensions). The normative sample is small (total $N = 86$), and was overwhelmingly Caucasian but did include both male and female subjects, and the CDAP correctly discriminated an alcohol abuse group from a poly-drug abuse group at a rate of 100%. The computer format will also generate a summary report (Inciardi, 1994).

Because of the nature of its content, the CDAP can be useful in providing a very detailed assessment for the purpose of individualizing treatment, as well as for assessment of treatment outcome. Some items have the potential for sensitivity to change, particularly those tapping the expectation and substance use behaviour domains (e.g., "I can be more assertive when I drink" and "How many days per months do you miss work because of drinking?"). Other historically based items will be less sensitive to change (e.g., "Have you ever passed out from drinking?" and "How many times have you stopped drinking and then started back?"

Individual Assessment Profile (IAP)

The IAP (Flynn, Hubbard, Luckey, Forsyth, Smith, Philips, & Fountain, submitted) is a structured clinical interview intended to assess clients for treatment planning purposes, but also includes forms for treatment progress evaluation at various points in treatment. The IAP was developed from surveying a wide range of treatment programs with respect to the data collection strategies they used, and from consultation with "expert panels" as well as previously standardized instruments in the field. This battery shares a number of features with the ASI and the DATAR, both reviewed above. The interview covers the following areas: Demographic background; programme admission source/reason; living arrangements; smoking, alcohol, and drug use; illegal activities; sources of support/employment; medical health; and mental health. The client rates on a four-point scale his or her degree of concern about problems in each domain, and his or her assessment of need for treatment. In turn, the interviewer rates each problem with respect to her opinion of the client's need for treatment, as well as her assessment of possible distortion on the part of the client. The interview takes approximately 50 minutes. It

is recommended that an experienced drug counsellor undergo one day of IAP training. Severity ratings are converted into a client profile which quantitatively summarizes the client's problem areas.

Internal consistency analysis indicate good cross-rater agreement (90%), while test-retest reliability was poor (below .40) on a number of items. With respect to validity, self-report on the IAP and results of urinalysis and hair analysis produced fairly good concordance (88-98% for most substances, 62% for cocaine). As the IAP is a relatively new instrument, no official normative data are yet available, and a number of validity and reliability studies have yet to be published or submitted for publication.

A computerized administration format has been developed; this software is apparently quite flexible with respect to generating reports that fit a variety of required formats, thus might prove useful for institutions such as Correctional Services.

Substance Use Disorder Diagnosis Schedule (SUDDS)

The SUDDS (Harrison & Hoffman, 1989) is a structured interview (can be administered by a clinician or by computer). It consists of 99 items which contribute to 9 subscales, 30-45 minutes administration time is required, and administration by a trained substance abuse professional is recommended in the case of the interview format.

Allen and Columbus (1995) review results that demonstrate the equivalence of the computer-administered and the clinician-administered protocol (diagnostic agreement 88% - 96%; kappa coefficients .71 - .86). Additionally, both formats concurred well with clinician diagnosis (82% - 90%). Further psychometric work includes split-half reliability, validity (content, predictive, concurrent, and construct), and factor analysis. No normative data are available (Allen & Columbus, 1995).

Drug Offender Profiles: Evaluation/Referral Strategy (DOPERS)

The DOPERS was designed by the Texas Adult Probation Commission (now the Community Justice Assistance Division) in order to examine the relationship between drug use and criminal behaviour of individual offenders; the ultimate purpose is to match the offender to

an appropriate treatment (National Institute of Corrections, 1991). The DOPER is intended to assess: drug use, criminal behaviour, consequences of drug use, and treatment history; in addition, the probation officer's perception of the offender is included. The instrument attempts to tease out the place of drugs in the offender's criminal behaviour, that is, is he or she a drug user because of involvement in crime, or is the criminal activity drug-use driven? The National Institute of Corrections (1991) notes the complexity of scoring as a disadvantage.

(Drug) Offender Profile Index

The (Drug) Offender Profile Index (OPI; Inciardi, 1993) was developed in conjunction with the National Association of State Alcohol and Drug Abuse Directors (NASADAD; National Institute of Corrections, 1991); it is described as appropriate in pretrial and post-institutional offender populations. The purpose of the instrument is to match the offender to the optimal type of drug treatment. However, Inciardi (1994) is quite clear that the OPI provides broad treatment recommendations, rather than individual treatment planning; that is, he recommends additional assessment for the tailoring of treatment to an individual. The OPI is based on the notion of "stakes of conformity"; by this is meant the belief that those with higher stakes in conforming to social norms are less likely to commit crimes than those with low stakes in conformity. Thus, the index taps into the offender's level of conformity stake in the following domains: Drug use severity; psychological and treatment history; family support; education and school involvement; work, home, and correctional history; and HIV risk behaviours. Inclusion of the latter domain is one of the strengths of the Index . A further major strength lies in the treatment recommendation which corresponds to the offender's numerical score on the OPI (Inciardi, 1994). A "panel of experts" selected domains and specific items for inclusion. The Index requires about 30 minutes for administration, and should be administered by a trained correctional or substance abuse professional; in addition, a one-day training is required for administration. Scoring is aided by a grading guide. At the time of the National Institute of Corrections report (1991), the NIC indicated that Index was undergoing rigorous psychometric evaluation; we were unable at this time to locate the results of these evaluations.

Interestingly, Inciardi (1994) denotes the OPI a "screening instrument". However, our examination of the instrument itself lead us to conclude that it provides a much more detailed

picture of the offender than any usual screener. Thus, we have included it among the broad assessment batteries.

Drug Lifestyle Screening Interview (DLSI)

The DLSI (Walters, 1994) is a structured interview developed for the purpose of assessing four particular lifestyle areas theorized by the author to be characteristic of behaviour patterns of those with drug abuse problems. These areas are: Irresponsibility; stress-coping imbalance; interpersonal triviality; and social rule breaking/bending. Twenty-three items contribute to the four subscales.

Inter-rater reliability for the individual items was quite variable (kappas ranged from .13 to 1.0), but was moderate to moderately high (.57 - .83) for the four subscales and the total index. The DLSI was tested on 120 correctional inmates enrolled in a drug treatment programme, and a number of items and indices were able to discriminate "high volume" from "low volume" substance abusers. With respect to classification into these two groups, the DLSI reached an overall hit rate of 77% (false positive rate of 16% and false negative rate of 7%). Walters (1994) views the DLSI to be "a reasonably reliable and potentially valid measure of lifestyle patterns of drug-seeing behavior", but we find some of the reliability values, at least at the item level, to be inadequate. Further, one would wish to investigate the potential for the DLSI to make finer distinctions than classification into "high" and "low" groups, given the recent movement toward a continuum conceptualization of substance abuse. However, the validation of the DLSI in a correctional sample is a strong point, and Walters (1995) found the DLSI to have a small predictive effect on alcohol and drug misuse at two-year follow-up (criminal background was a far more powerful predictor).

Wisconsin Uniform Substance Abuse Screening Battery

The Wisconsin Uniform Substance Abuse Screening Battery (National Institute of Corrections, 1991) incorporates the ADS, the Offender Drug Use History (ODUH), the Client Management Classification interview, and the Megargee offender typology of the MMPI. Inciardi (1994) notes that the Wisconsin Battery has as a major advantage its ability to provide very specific treatment recommendations. Vigdal and Stadler (1992) describe the battery as a

"marriage of dimensional and categorical measurement approach that utilizes both substance use and abuse and other client features to rapidly identify offender with similar behavior needs and profiles" (p. 129). The ultimate purpose of the battery is to provide treatment matching of a sort.

The ADS has been reviewed in some detail, above. The ODUH incorporates a substance abuse treatment history and usage for ten different drug classes; scores are converted into categorical levels of involvement in drugs, and three levels are possible. The Client Management Classification Interview is a semi-structured schedule that produces a categorization of the offender into one of five levels of need for supervision/treatment. The Megaree is a self-report measure of major dimensions of psychopathology.

Laboratory Assessment

Cooney et al. (1995) classify laboratory assessments, with respect to alcohol abuse, into three categories. The first includes breathalyser, blood alcohol and drug readings, saliva testing, and urine testing. These authors note that this category is used more frequently in Emergency Rooms for screening and to corroborate self-report. The tests are accurate with respect to very recent consumption, but clearly cannot assess patterns of use over stretches of time unless employed repeatedly. The second category consists of those measures used to assess organ toxicity, thus more chronic alcohol problems. Plasma gamma glutamyl transferase (CGT) and mean corpuscular volume (MCV) have been shown to have variable sensitivity (20-60%) and somewhat better specificity, but a high rate of false-positives. The third category of laboratory alcohol assessment includes measures of "non-specific alcohol-related changes". These include measurement of plasma carbohydrate deficient transferrin (CDT), and measurement of the ratio of plasma mitochondria aspartate aminotransferase (m-AspAT) to the total AspAT. Sensitivities appear higher for these two tests, ranging from .76 to .90.

Sobell et al. (1994) review a number of biochemical measures, dividing them into measures of recent use versus long-term use. Recent use assessment procedures include breath alcohol tests, the alcohol dipstick, urine tests, saliva tests, and the alcohol sweat patch. Chronic use tests include liver function tests, and hair analysis.

Laboratory tests are of fairly limited use in an assessment geared toward treatment planning, particularly in incarcerated populations. The 'recent use' procedures are not likely to pick up drug use by the time of the assessment period, and biological markers do not provide any measure of the kinds of variables that might be used to select from treatment options, such as cognitive functioning, knowledge, attitudes, severity and patterns of substance use, and the effects of substance use on multiple areas of life functioning. In addition, many tests have fairly low sensitivity (Addictions Research Foundation, 1998). Skinner et al. (1986) have noted that some self-report tests such as the ASI are better at identifying alcohol problems than are biological markers. Some have recommended the use of laboratory tests in monitoring treatment progress when abstinence is the goal, particularly in cases where the validity of self-report progress might be suspect.

Recently, guidelines for use of biochemical markers in substance abuse research have been published (Allen, Fertig, Litten, Sillanaukee, & Anton, 1997).

Case Needs Identification and Analysis: Substance Abuse Domain

The primary purpose of this section is to assess the substance abuse domain of the "Case Needs Identification and Analysis" instrument. An important aim of this instrument is to allow case managers to systematically classify offender needs with respect to substance abuse such that the needs can be appropriately addressed.

The Case Needs Identification and Analysis instrument (Motiuk & Pisapio, 1991) was derived from the more extensive Community Risk/Needs Management Scale (Motiuk, 1989; Motiuk & Porporino, 1989). The latter was developed from earlier work with young offenders that utilized a similar forced-field analysis of needs (Lerner, Arling & Baird, 1986). While the Community Risk/Needs Management Scale assessed offender's needs along 12 dimensions or domains, the "Case Needs Identification and Analysis" instrument collapsed these into seven primary domains: employment, marital/family, associates/social interaction, substance abuse, community functioning, personal/emotional orientation, and attitude. These need domains are assessed through the use of various indicators. A longer version of the "Case Needs

Identification and Analysis" instrument (Part A in the Offender Intake Assessment) was developed for offender needs assessment upon admission to federal custody. In this version of the scale, offenders' substance abuse needs are evaluated by 13 indicators of alcohol problems and 13 indicators of drug problems (see Appendix A). In addition, three indicators query the offender's history of substance abuse assessment and intervention. Based on an assessment of these indicators the assessor assigns a rating to the offender with respect to the substance abuse domain that indicates either 'no need for improvement', 'some need for improvement', or 'considerable need for improvement'.

Because of the need to gather case-specific information to ensure better management of federally sentenced offenders while under conditional release, a streamlined, community-based version was developed and tested (Motiuk & Brown, 1993). Only two indicator questions are asked in the community version; one for alcohol and one for drugs (see Appendix B). However, each one of these indicators collapses the five interference questions addressed separately in the admissions version- 'Does the offender's history suggest that drinking (drugs) may interfere with at least one domain: marital, employment, legal, physical, financial?'. The assessor must determine if the answer is yes, no, or unknown and whether the issue has been addressed. The assessor is also required to rate the need for improvement, the need for intervention and the offender's level of motivation. Both of these instruments can be administered with paper and pencil but computerized versions appear feasible.

Admissions Version. The first five indicators are subsumed under 'pattern' of alcohol (drug) use. One assumes that a variety of information, including offender's self report, is used to assess the indicator-'Abuses alcohol?', but nowhere is this information specified. This subjectivity is not reduced by the 'help message' associated with this item-'offender drinks to excess'- because 'excess' is also not operationalized . This item assumes extra importance as an indicator because if it is answered in the negative other items in the alcohol domain are by-passed. This process may save some time, but since all the other alcohol indicators are evidence *for* an alcohol problem a safer procedure might be to put this item last in the alcohol domain. In effect, 'Abuses alcohol?' would be operationalized by assessing these more concrete, specific items. Since this protocol is completed as part of the Offender Intake Process, it is likely

concurrent with completion of the CLAI. If this is the case, a secondary strategy might be simply to substitute the results from the ADS as an operational definition of 'Abuses alcohol?'(or DAST in the case of 'Abuses drugs?'). Since the ADS and DAST provide severity norms, their inclusion would also be a distinct aid in the assessor's rating of 'need for improvement'. At the very least, results from the CLAI could be used to supplement case managers judgement as to the presence and severity of substance abuse problems. The use of multiple sources of judgement would also address concerns about the possibility that an offender is faking responses or engaging in impression management (Lightfoot, 1995).

A positive answer to 'Began drinking at an early age?' is often associated with alcohol problems and is probably determined by the offender's self-report. One wonders if this historical information adds anything to the assessment once the offender has been determined to abuse alcohol on the basis of the first indicator. It should also be kept in mind that certain cultural groups (e.g. Jewish) are introduced to alcohol very early but have a very low rate of alcohol problems. Finally, if this protocol is used with women, it should be kept in mind that they often initiate drinking and drinking problems later than do men, but that problem development is often more rapid.

The indicator 'Drinks on a regular basis?' is aimed, as the 'help message' states, at determining if 'drinking is a part of the offender's lifestyle'. In this case, the help message itself might be better substituted as it is more functionally related to the desired information. No other help messages are provided for the assessor in evaluating other indicators of alcohol abuse.

'Has a history of drinking binges?' is a valuable indicator because binge drinking is particularly associated with negative consequences. Again, however, no definition of binge is provided. A common definition of binge drinking is 5 or more drinks (4 for women) at one sitting or occasion (Wechsler et al., 1994). However, drinking binges can also mean drinking continuously for two or more days in a row. This might be clarified for the assessor. In this respect the CLAI offers excellent guidelines.

'Has combined the use of alcohol and drugs?' is an indication, in part, of the person's general involvement with substances. Without an indication of the frequency (e.g. rarely, occasionally, regularly, etc., this item does not provide much information. Nevertheless, there is some data to suggest that offenders who regularly use both alcohol and drugs concurrently are more likely to have been arrested for violent crimes than those who use only alcohol or only drugs (Miller and Welte, 1986).

From the material available to us it is not clear why some indicators of excessive drinking patterns were excluded (e.g. Drinks in the morning?, Drinks alone?). We presume it was for practical purposes, such as not wishing the protocol to be too time consuming.

The next three indicators query if the offender 'Drinks to excess during leisure time?', 'in social situations?', and 'to relieve stress'(identical indicators are used with drugs).These types of situational determinants of excessive drinking are commonly included in alcohol questionnaires (e.g. Inventory of Drinking Situations) and are useful for targets in treatment and relapse prevention. The question arises as to whether these three indicators are useful at intake assessment, especially as the determination of the presence of an alcohol problem is made independently of these indicators. If offenders later enter programs such as CHOICES or OSAPP, situational determinants will be assessed again and much more thoroughly.

The final set of five 'interference' indicators assess the consequences of drinking (same for drugs) for the offender in area of employment, marital/family relations, social relations, law violations, and health. Such indicators are widely incorporated into screening and other types of assessment instruments for alcohol abuse (e.g. The MAST) and are consistent with the World Health Organization definition of alcohol abuse in terms of negative consequences. These consequences also serve as important motivators for change when used as feedback in the fashion suggested by Miller et al., (1995). However, it is not clear why some interference indicators were excluded. For example, interference with mental and emotional health is not included, nor is interference with financial or money matters. Even if anxiety, depression and other indicators of poor emotional health are not criminogenic factors *per se* (Andrews, 1995),

they often exist in a reciprocal relationship with substance abuse (e.g. self-medication). Financial management problems are a criminogenic factor supported by research (Andrews, 1995).

The final three indicators of the substance abuse domain tap into the offender's history of assessment and intervention for substance abuse. Prior substance abuse assessments and treatments are an indicator of substance abuse problems. Apart from this, permissible access to previous assessments can enrich understanding of the offender's substance abuse problem, including its development since last assessment. Similarly, knowledge about failures and successes of past treatment approaches can be valuable in suggesting new interventions.

Because the indicators for drugs directly parallel the indicators utilized in the alcohol domain, our comments above apply equally to the drug domain. Thus, to avoid redundancy we will not discuss the drug indicators further. In the material available to us, no reliability, validity or outcome data could be found testing the admissions version of the 'Case Needs Identification and Analysis' instrument. It is our understanding that it is currently being tested.

Community Version. The indicators used in the community-based version are broad "catch-all" questions. 'Does the offender's history suggest that drinking may interfere with at least one domain: marital, employment, legal, physical, financial?' The identical question is asked about drugs. The assessor must determine if the answer is yes, no, or unknown.

In general, these questions are consistent with the definition of substance abuse held by the World Health Organization. That is, alcohol or drug abuse exists when use of the substance causes or contributes to problems in one or more areas of life. As noted above, it is not clear from the material we have why other consequences were not included. Again, mental and emotional health is not considered. Interestingly, social relationships other than marital/family were included in the admission version but not in this community version. On the other hand, interference with financial functioning is included in the community version but not in the admissions version. Since the idea of the community-based needs assessment is to assess dynamic needs that are amendable to change, the rational for these inconsistencies is not clear to us.

The basis of the assessor's judgement of "yes, no, or unknown" is not clear, but one presumes that assessors are given some training in determining responses. For example, self-reports from offenders about substance use show good agreement with psychometrically sound assessment instruments such as the ADS and DAST (Weeks, Moser & Langevin, 1997) and by the time a community-based assessment of needs is carried out, the ADS and DAST results from the CLAI would be available to at least supplement other sources of judgement about the presence and severity of substance abuse problems.

Regardless of the bases of judgement, the outcome of the community-based needs assessment might still be quite valuable if it proves a valid indication of problems. In this respect, research by Motiuk and Brown (1993) is supportive. These investigators found that the two indicators were able to identify 53.1% of a sample of 573 released male offenders as having substance abuse problems, and 48% of a sample of 31 female offenders. While these percentages are somewhat below the approximately two-thirds identification rate provided by the ADS and DAST as part of the CLAI and supported by other studies (Weeks, Moser & Langevin, 1997), it is still substantial. Perhaps the lower figures represent the possibility that some offenders no longer see themselves as having substance abuse problems at the time they are released. Alternatively, the community instrument may be identifying only offenders with moderate to severe substance abuse problems. These possibilities can be tested by comparison to more thorough instruments like the ADS and DAST and to data on the same offenders collected at admission. Adding to the validity of the community version is the finding that the substance abuse indicators were predictive of suspensions at four month follow-up, although only the drug use question predicted suspensions at six months. Also encouraging was the finding that substance use identification increased with the level of conditional release: 40.6% for males in full parole, 51% for those on day parole, and 66% for those on mandatory supervision.

One would not expect these two indicators to be as good as more comprehensive and psychometrically sound questionnaires, such as the ADS and DAST, in identifying substance abuse problems. However, they appear to be as useful as many brief screening devices for identifying the presence of substance abuse problems. One useful way of further testing the validity of the indicators as identifiers of substance abuse problems would be to compare the

results of indicators with data on the same offenders assessed by the ADS and DAST or even by another instrument (e.g. CAGE) designed specifically for screening purposes. This could be done for the admission indicators and the community-based indicators. The relative success of these indicators is likely due to the broadness of the question addressed (i.e. Does the offender's history suggest that drinking or drugs may interfere with at least one domain: marital, employment, legal, physical, financial?). There is a certain redundancy built in to such questions as well. For example, in the longer version the assessor attempts to determine if the offender: Abuses alcohol?, Began drinking at an early age?, Drinks on a regular basis?, Has a history of binge-drinking?, Has combined the use of alcohol and drugs?, Drinks to excess during leisure time, in social situations and to relieve stress?. If these indicators are present, chances are that there will be interference with at least one domain. This hypothesis can be developed and tested by determining the extent of agreement between the needs assessment carried out at admission with that carried out at release. It is possible that the longer admission version adds nothing to the accuracy of identification over the shorter community version. Finally, while single item indicators limit psychometric exploration, it would be possible to assess inter-rater reliability of the community-based (and admissions based) instrument by having the same case material assigned to different case managers for evaluation and calculating an agreement index. Given that one of the purposes of these scales is to encourage systematic handling of information by case managers, this form of reliability would seem to be important.

Motiuk and Brown (1993) suggest that "Case Needs Identification and Analysis" "can also provide a useful means to monitor changes in the offender's behaviour, attitudes, and circumstances which are clearly related to release outcome" (p. 54). This reviewer has some problems with this suggestion as the wording of questions is historical (i.e. Does the offender's history, etc). If it is to be used to monitor changes it might be best to orient the wording to "Does the offender's history *since release*". In other words, one would have to change the wording to suit the time period being assessed.

In part, this difficulty is surmounted by the subsequent question -'If yes, has issue been addressed?'. However, the authors specifically note that because a need has been addressed does not mean it has been resolved or no longer requires intervention. Similarly, the associated section

on observation /impression of need for improvement does not lend itself to current monitoring of the substance abuse domain because it adds history as a criterion for judging improvement. For example, "No immediate need for improvement" is judged according to the criterion of "no history or indication of current difficulties." The other categories are similar. To be useful as a monitor of change, the wording would have to reflect the time period. For example, "No history *since release* or indication of current difficulties." Finally, in managing a substance abuse problem, clinicians would generally find it useful to know how the substance abuse problem was successfully or unsuccessfully addressed in the past as these considerations might influence recommendations for future treatment or maintenance.

Motiuk and Brown (1993) did not report whether offenders who had their substance abuse problems addressed did better in terms of reduced suspensions than those who did not, but the interesting data should be available for analysis. Similarly, they did not report outcome in terms of rated need for improvement. One would expect that rated need for improvement would be related to severity of substance abuse problem, which would in turn be related to outcome.

The substance abuse domain also assesses "need for intervention" in terms of intensive inpatient treatment; outpatient treatment; maintenance and follow-up; health counselling regarding HIV and Hepatitis; drug education; and a space is also given for providing open ended comments concerning intervention. Apart from the health counselling, which appears to be a very good idea, this section crosses level of intervention (inpatient, outpatient, maintenance, drug education) with assessed need (low, medium, high). In effect, this is an attempt at matching. Normally, treatment matching is based on a very thorough assessment. In this case however, the substance abuse indicators yield only a dichotomous yes/no answer to the presence or absence of substance abuse. One assumes then, that the ratings for 'need for intervention' are primarily based on rating of 'need for improvement'. For example, an offender given a "high" rating for intensive inpatient treatment would likely have been rated as "considerable need for improvement." Such a system should be validated by comparison with a more thorough assessment provided by the CLAI or one of the more comprehensive instruments mentioned earlier that were designed for this purpose. This is important, as in this reviewer's experience there appears to be a bias among parole and classification officers towards recommending more

intensive treatments than are necessary. In addition, constraints (e.g. which treatments are available) often determine the level of intervention suggested. Finally, self-help organizations, such as NA and AA are not included in the list of interventions presented.

The substance abuse domain also assesses "level of motivation for intervention" in terms of low, medium, and high. This is likely to be useful as an indicator of attitude towards a substance abuse problem, but it should be assessed for any predictive value it might have on the outcome of interventions. Many empirically supported substance abuse treatments now treat motivation as a dynamic quality that reflects the particular stage of change the substance abuser is currently experiencing (Prochaska, Di Clemente, & Norcross, 1992). Built into a good treatment is a strong early provision for increasing motivation (Miller & Rollnick, 1991).

Finally, the substance abuse domain of the community-based 'Case Needs Identification and Analysis' asks "Is there any special N.P.B. condition which could be used to effect the above intervention(s)?" One assumes that the standard answer is a condition to maintain abstinence from alcohol and drugs. An alternative that might be considered is a condition to take part in treatment and to attend maintenance sessions. This would allow some flexibility in terms of treatment goals. For example, an offender in community treatment whose main problem is heroin may not be in serious trouble should he drink alcohol. Revoking parole in this case would not be in the best interest of keeping him in treatment.

PART III: CONCLUSIONS AND RECOMMENDATIONS

About two thirds of offenders evidence some degree of substance abuse problems. This high prevalence, along with other sources of data, indicate a strong association between substance abuse and various types of crime. At this point, the particular nature of this association is not clear. However, there is support for the assertion that effective treatment of substance abuse reduces crime.

Since incarcerated substance abusers constitute a heterogeneous group that vary on many dimensions, assessment is needed to identify their particular needs, to match them to appropriate treatments, and to manage risks when they are released. In addition, there is a need to create a data base for research and other purposes.

Assessment instruments for substance abuse can be roughly grouped into screening instruments, where the major function is to determine the presence or absence of a problem; more in-depth instruments that elaborate on the problem (e.g. allowing an estimate of the severity of the problem); specific instruments that are useful for establishing targets for treatment and relapse prevention, as well as assessing pre-post changes; and comprehensive batteries that assess not only patterns and severity of substance abuse, but functioning in many other domains. These broad assessment instruments can serve many purposes including the determination of multiple needs, determining appropriate treatments, and building a data base for research and other purposes. The CLAI would fit into this category.

Our review established that there are a number of brief and reasonable accurate screening instruments available, including the AUDIT, CAGE, ACI and MAST. However, the function of screening instruments is to identify those who should have a more thorough assessment. Since all admissions to federal prisons are assessed by the CLAI, the use of a screening instrument would be redundant.

Our review also identified several very good measures for assessing the severity of substance abuse problems, including the LDH, SADD, SADQ, ADS and DAST. Our analysis showed that the ADS and DAST, currently used by CSC as part of the CLAI, are as good or

better in terms of reliability and validity and other factors, as any comparable instruments available. Thus, we do not recommend any changes.

Our review of comprehensive assessment batteries also determined some excellent candidates, including the ASI, the AUI, CDAP, and the CLAI. At least one of these batteries, the ASI, is very widely used and is in its fifth edition. All batteries have generally good psychometric properties. In terms of number of items, the CLAI is possibly the most comprehensive and we could find no compelling reason to suggest the use of any other comprehensive battery in its place.

In effect, the CLAI serves multiple functions of screening, in depth assessment of substance abuse (including assessment by ADS and DAST), as well as assessment of many other domains (e.g. health, social, etc.). It can be used for treatment planning, and it has already resulted in a tremendous data base of information on federal offenders. In addition, the computerized format is state-of-the-art and well accepted by the offenders. The immediate provision of feedback to offenders and extensive feedback to case management officers also is a distinct asset.

One of the few gaps in coverage by the CLAI is a screen for neurological difficulties. The ASIST-1 had incorporated the TRAILS and Digit Symbol subtest for this purpose, but CSC might consider the use of some recent computerized neuropsychological instruments that would fit the format of the CLAI, such as Wisconsin Card Sort. Substance abusers, especially those with severe alcohol problems, commonly have neurological deficits (Miller & Saucedo, 1983) that can interfere with treatment response. Identifying these deficits may be important in determining the best type of treatment to meet their needs. Further support for brief neurological screening comes from the literature on Fetal Alcohol Syndrome (Boland, 1998; CSC Research Report). Individuals with either full or partial Fetal Alcohol Syndrome have permanent neurological damage and are at greatly increased risk for coming in contact with the criminal justice system. Aboriginals are over represented among those who have this syndrome. Identifying individuals for more thorough screening would be important as they are highly unlikely to respond to the format and pace of treatments currently offered by CSC.

Our review of instruments assessing specific treatment targets suggests a number that might be incorporated into CSC substance abuse programs. Some of these, such as the IDS and IDTS, which assess situations where alcohol or drug use are most likely to be problematic, and the SCQ and DTCQ, which assess self-efficacy related to those situations, are already incorporated into CSC programs such as the CHOICES and OSAPP programs. However, other interesting scales with good psychometrics are available. For example, the NAEQ measures offenders' expectations of negative consequences if she or he were to "go for a drink now". Such scales, that isolate drinking expectancies (e.g. DEQ), are also useful for determining targets in cognitive-behavioural programs as well as allowing assessment of pre-post changes in those areas. The DEQ also has a useful companion scale (DRSEQ) that measures self-efficacy in various expectancy situations. Similarly, the AASE, which has excellent psychometric properties, also has considerable promise as a short (20 item) assessment of self-efficacy at maintaining abstinence in high-risk situations. Accommodation to drug abuse situations should be relatively easy. Finally, the TRI which targets urges and cravings to use substances could be used with training in urge control and pre-post evaluation of its effects. Although programs like CHOICES spend time on urge control, no formal measure is associated with the training.

Many substance abuse treatment programs are now incorporating some versions of Prochaska and Di Clemente's Stages of Change model in order to better address treatment readiness and motivational issues. The SOCRATES and RTCQ appear to be good bets in this regard and might be incorporated into pre-treatment assessment as well as pre-post evaluations.

Our analysis of the substance abuse domains of the "Case Needs Identification and Analysis" instrument, admissions version, noted that there was a high degree of subjectivity in assessing the primary indicator "Abuses alcohol (drugs)?" as well as with the other indicators in this section.

Our recommendation suggests that CSC adopt one of the following alternatives: 1) Operationalize what a positive response to this indicator would constitute; 2) Place the "Abuses alcohol (drugs)?" at the end of the other indicators and use these as an operational definition; 3)

Substitute, or supplement with, the ADS and DAST and other information from the CLAI to determine if the offender "Abuses alcohol (drugs)?".

The reviewer would also like to raise the question of apparent overlap with the CLAI, in the substance abuse area and several other domains. Since both the "Case Needs Identification and Analysis" instrument and the CLAI are completed on admission, it is not clear to this reviewer why the substantial information that is made available to the case manager from the CLAI cannot substitute for some of the domains of the "Case Needs Identification and Analysis" instrument that overlap (e.g. substance abuse). While it is true that the two instruments may serve somewhat different functions, the double assessment at admission seems redundant. For example, it appears to this reviewer that the CLAI information is more thorough and valuable in determining substance abuse needs and treatment options than the more limited and subjective "Case Needs Identification and Analysis" instrument. The reviewer acknowledges that he is much more familiar with the CLAI and has had limited exposure to the Case Needs instrument and may be misreading its function.

Based on materials provided, the reviewer could find no evidence for psychometric evaluation of the admissions version. While this is likely to be in progress, it is recommended that substance abuse identification on this instrument be compared with results from the same offenders on the CLAI.

The community version of this instrument has a clear function and the need for a brief, simple instrument makes practical sense. As well, substance abuse is determined in terms of interference with functioning in important life areas, although what constitutes interference is not defined. The review noted some inconsistencies, in that interference with social functioning other than marital/family is not included, nor is interference with mental and emotional health. This can be easily remedied, if desired. The reviewer notes that the single indicator question used has a built in redundancy that makes it likely to reflect the more numerous indicators used in the admissions version. If this measure is used as a general monitor of progress after release, the reviewer recommends a change in wording to reflect the period being monitored.

Motiuk and Brown (1993) present encouraging data on identification of substance abuse with the community version. A further validity study comparing identification rates with the ADS and DAST is recommended. In addition, since the criteria on which case managers base their judgements are not specified, a study exploring inter-rater reliability would also be appropriate. This seems particularly relevant if one of the aims of this scale is to have case managers systematically classify offender needs. Finally, a study on the same offenders comparing judgements made at admissions with those made at release would be useful.

These are the main conclusions from our review. The reader should note that other minor conclusions and suggested improvements are mentioned in the body of the text.

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APPENDIX A

Case Needs Identification and Analysis

Substance Abuse Domain

Principal Component	Sub Component	Indicators
Alcohol Abuse	Pattern	Abuses alcohol? Began drinking at an early age? Drinks on a regular basis? Has a history of drinking binges? Has combined alcohol and drugs?
	Situations	Drinks to excess during leisure time? Drinks to excess in social situations? Drinks to relieve stress?
	Interference	Drinking interferes with employment? Drinking interferes with marital/family relations? Drinking interferes with social relations? Drinking has resulted in law violations? Drinking interferes with health?
Drug Abuse	Pattern	Abuses drugs (solvents, prescription drugs etc.)? Began using drugs at an early age? Uses drugs on a regular basis? Has gone on drug-taking sprees? Has combined the use of different drugs?
	Situations	Uses drugs during leisure time? Uses drugs in social situations? Uses drugs to relieve stress?
	Interference	Drug use interferes with employment? Drug use interferes with marital/family relations? Drug use interferes with social relations?

Principal Component	Sub Component	Indicators
Interventions	History	Drug use has resulted in law violations? Drug use interferes with health? Prior substance abuse assessment(s)? Has participated in substance abuse treatment? Has completed substance abuse treatment?
Help Messages	Offender drinks to excess.	Abuses alcohol?
	Drinking is part of the Offender's lifestyle.	Drinks on a regular basis?
	Uses prescription drugs in excess of directions or uses illegal drugs.	Abuses drugs?
	Using drugs is part of the Offender's lifestyle.	Uses drugs on a regular basis?

Taken from Annex R - Major amendments included in Version - Vol. 1 No. 1 of the Case Management Manual.

APPENDIX B

CASE NEEDS IDENTIFICATION AND ANALYSIS DOMAIN: **SUBSTANCE ABUSE**

SUBSTANCE ABUSE NEED IDENTIFICATION AND ANALYSIS

INDICATORS	IF YES, HAS ISSUE BEEN ADDRESSED?*
1. Does the offender's history suggest that drinking may interfere with at least one domain: marital, employment, legal, physical, financial? Yes ? No ? Unknown ?	Yes ? No ? Unknown ?
2. Does the offender's history suggest that drug use may interfere with at least one domain: marital, employment, legal, physical, financial? Yes ? No ? Unknown ?	Yes ? No ? Unknown ?

*NOTE: Because the need has been addressed in the institutions or in the community may not mean the offender no longer requires intervention.

SUBSTANCE ABUSE NEED OBSERVATION/IMPRESSIONS:

Factor seen as an asset to community adjustment	No immediate need for improvement	Some need for improvement	Considerable need for improvement
	? No history or indication of current difficulties	? History or indication of use causing moderate adjustment problems	? History that indicates frequent uncontrolled usage causing serious adjustment problems

CASE NEEDS IDENTIFICATION AND ANALYSIS

DOMAIN: **SUBSTANCE ABUSE**

NEED FOR INTERVENTION

(If no need, skip this section and go on to next domain)

	Unable to Assess	Low	Mediuim	High
Intensive inpatient treatment	?	?	?	?
Outpatient treatment	?	?	?	?
Maintenance and follow-up	?	?	?	?
Health counseling re HIV, hepatitis, drug education	?	?	?	?

Other/Comments:

_____

_____

LEVEL OF MOTIVATION FOR INTERVENTION

? Low (unwilling to involve self)

? Medium (willing if required by case manager)

? High (self-motivated)

Is there a special N.P.B. condition which could be used to effect the above intervention(s)?